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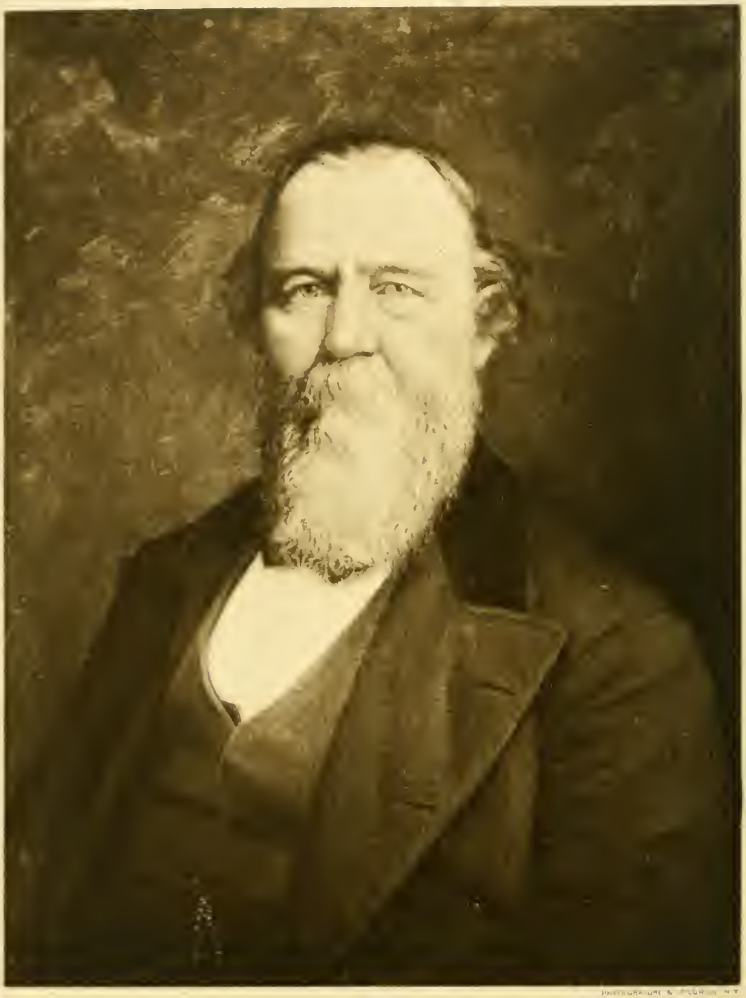

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WORCESTER COUNTY

HORTICULTURAL SOCIETY,

A. D. 1896-97.

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WORCESTER COUNTY
HORTICULTURAL SOCIETY,
A. D. 1896.

ANNUAL REPORT OF THE SECRETARY.

To the Members
of the
WORCESTER COUNTY HORTICULTURAL SOCIETY:

WITH the passing of William T. Merrifield, on the 27th of last December, at the extreme age of eighty-eight (88) years, the existence of the generation by which this Society was founded, and so long maintained in perennial vigor, may be considered to have virtually closed. It is true there are some whose years are not so far removed from his, and still more who treasure among their vivid horticultural memories a clear recollection of his life-long association with our early corporate action and aims. But yet he must be accounted rather as one of those choice spirits who united with William Lincoln, John Green, Anthony Chase, Frederic William Paine and the Senior Salisbury; who were not selfishly satisfied to gather from their own orchards, or to consider the lilies in enclosed field or open meadow; but elected to lay broad and deep the foundations of a Society whereby to advance the science and encourage and promote the practice of horticulture in and throughout the County of Worcester. From the very first, the contributions of Mr. Merrifield, whether of Fruit or Flower, and usually of both, were never lacking. Latterly, as his store of Plants,—

either distinctively Ornamental, or of Special Rare Foliage,—was augmented by natural increase or judicious purchase, our local field became too contracted for his ambition, which could not content itself within the restricted compass of a "pent up Utica." For years his collection was represented in the Exhibitions of the Massachusetts Horticultural Society, and the occasions were few indeed when first awards did not fall to his lot. It was the good fortune of Mr. Merrifield to be aided by the service of Mr. James Comley who, in that early employment, first gave evidence of the professional skill and individual good taste which has since become so conspicuously manifest in Green-House and Garden at Lexington. It must not be supposed that his honors came to Mr. Merrifield without a struggle; for in President Salisbury he found an antagonist who was not to be regarded lightly. But it was an honorable contest for preëminence;—a rivalry always dubious upon its merits, yet ever conducted amicably and whereof the decision was accepted without murmur or repining. Mr. Merrifield kept up his interest in that special culture until the difficulty of obtaining suitable professional skill, combined with the burden of years, induced him to relinquish what had been a mingled pleasure and responsibility. When, because of advancing years, the proper oversight of his choice collection of Plants exacted more attention and time than he could well bestow, he offered the whole to the Commission of Public Grounds of Worcester, in free and unrestricted gift. That it was declined, with cordial gratitude for the generous proffer, was due to no lack of appreciation, but to the fact that the Commission at the time possessed no facilities for the custody and care of specimens so tenacious in their requirements of steady temperature and continuous supervision. Since he parted with his pets his name has not appeared upon the rôle of our exhibitors. But his interest in the management of our affairs never failed to be displayed; and he was always ready to co-operate by word or deed at any apparent crisis in our business. He was of essential assistance when our Hall was originally planned and constructed, his practical experience being of unusual value at a time when the reputation of our

Builders had not become co-extensive with the Republic. At the termination of services so long and freely rendered it would argue ill for the credit of this Society were it to withhold the tribute to his memory so nobly earned by his disinterested labors in our behalf.

In this our Hall we shall see him no more in the body. But there ought to be, and indeed is, no valid reason why the space among his fellows, as yet vacant upon our walls, should not be filled by his portrait, to remind us continually that there is no break in the endless chain that connects Horticulture upon Earth with the Celestial Eden.

Months, nay years, have passed into the endless chain of Time, since, in response to somewhat querulous criticism of its conduct, your Committee on Library and Publication announced that it had made arrangements for a Card Catalogue of all publications in possession of the Society. It is to be hoped that it will be of use, when completed. So far, experience would hardly justify faith in a crying need to be supplied in such form and manner. The first application has yet to be made compelling recourse to the various decks cut, shuffled, and indicated. In the dogma of the final perseverance of the Saints, however, we are enabled to descry a ray of hope howsoever faint. So that it is possible for us to trust that the proposed Catalogue may be finished in the life-time of the youngest among you, *Deo volente;* and, more emphatically, its fancied benefits, *Fœminâ placente*, may be experienced by some now living. In the care and management of a small, select, and somewhat technical collection of Books, your Committee on Library and Publication decline to keep pace with literary scorcher, electing rather the sure, if more deliberate, guidance of Mnemosyne.

So much by way of prelude! to pattern after the pulpiteers.

Upon this occasion my Text may be found in the fifteenth verse, twenty-fourth chapter of Joshua:

"And yet, if it seem evil to you to serve the Lord, choose you this day whom ye will serve!"

Shall this Society advance in the ways that have been approved for a half-century; ways whose signal success has commended

them to our deliberate judgment, and wherefrom occasional departure, upon the spur of a fleeting impulse, has been fraught with decadence and loss? For more years than memory can easily recall, it was a settled practice to confine our efforts to the promotion of Horticulture within the County of Worcester, rightly deeming that field ample for all that we might do or consider. *So*,—we have prospered beyond ordinary measure; and *thus*, in all likelihood, we might continue to win praise and accumulate substance, if only contentment, that pearl of modest deserving, were esteemed an adequate reward for individual effort. We are ever striving and hoping for a bountiful harvest whereof the superfluity but contributes to nourish our discontent.

But we are not satisfied with "a little field well tilled," hearkening to the siren song that we should challenge the competition of Florists throughout the Republic in one particular department of professional rivalry. Without similar challenge, the *Fruit* of Worcester County speaks for itself everywhere, acknowledging no superior. Why should it be deemed worth our while to enlist in the foolish strife of modern professionalism; to array ourselves as floral gladiators whereby, if at the close of an embittered struggle, we achieve cup or purse, it must follow upon the sacrifice of all those incentives to which we owe our past uninterrupted prosperity!

Nothing struck the *Senior* Salisbury so forcibly, in a trip through England almost a half-century since, when he visited an Exhibition of the Royal Horticultural Society, as the fact everywhere too plainly manifest, that the preference of a limited class appeared to be regarded rather than the tastes of the multitude. He warned us to beware of that pitfall. Is there not cause; is it not time to repeat that warning of our whilom President and always benefactor? Shall we exalt the flowers of restricted culture, howsoever gorgeous in color, over those superb species which every one admires and that any one may cultivate to perfection! Shall the Chrysanthemum command the devotion of Three Days,—the Rose of an hour and half? What are its shortcomings that we are no longer to consider the Lily! What is there in that built-up idol of caprice, conceit,

and fashion that the simple lovers of flowers in the home-garden should suffer themselves to be carried off their feet in the mad rush to swell the throng which wastes energy and life in the inanities of Vanity Fair?

Such species are not, and cannot be, grown by the great majority of our members. Nor is it too much to assert that they are without the range of cultivation by any but the very few who get their livelihood by the growth of flowers that are beyond the means and skill of the average horticulturist. And after they have been thus rarely developed, they are at once placed on exhibition in every Florist's window, subject to cull and purchase by every one that passes. Are they withheld from public view that they may be displayed first in our Hall? The intense verdancy in such a question might well represent two blades of grass where was but one before. Do you care to see them, after hours and days of prolonged exposure to common inspection, when what chance to be left are brought in here, old and stale, if haply they may coax a languid gaze.

This Society is one of two or three in the world,—the *World*, mind you! that can pay its debts and thereafter stand upon its feet, solvent and reputable. What it now is, it has become through strict attention to its legitimate business; burning incense upon the altars of Flora and Pomona, but never sacrificing fatlings to brainless and formless idols. To its constant influence is it due that our homes are brighter and therefore happier; and to its substantial encouragement may we attribute the marked expansion of a taste for floral beauty once awakened. Our awards are generous, if not lavish, and suffice to many who might otherwise have to deny themselves, enabling them to procure plants and seeds, the nucleus of future displays upon our tables. We cannot, if we would; we ought never to wish to tag on behind the beneficiaries of Fraud and Trust—the pampered children of manifold monopoly to whom it is all one whether they provoke a languid curiosity by offering premiums of One Hundred Cents or a like number of Dollars. If you are wise in your day and generation, valuing the continued existence of your Society in sound and wholesome vitality, you will

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abandon all forms of Floral Debauch to the devotees of Fashion and Folly, who have long lost every sensibility to genuine emotion; whose sole appreciation of a Floral Display is based upon their desire to show fine clothes in crowd, glare and crush; and of whom it is enough to say in this connection, when we are pointed for an example to the sums that they half-contemptuously toss into the professional ring, that they never cared to, and never did, maintain a Horticultural Society. We are told that the Chrysanthemum is exhibited in the commercial metropolis in pomp and splendor, amid the array of fashion and frivolity; but we are not reminded by those who would have us fool away our substance in like manner, that the patrons of such labored displays are of the class who vie with each other in the profusion of their prodigal expenditure, and to whom, in turn, it is one and the same whether the Exhibition consists of Flower, Horse, or Dog! With them—butterflies of society,—the abuse of Floral Beauty verges upon prostitution. They form a framework whereon to illustrate the art of their dressmaker; and a dress-pattern in their judgment far outshines the rainbow tints of the most brilliant Japanese floriage. Shall we strive in hopeless rivalry with that get of the Golden Calf? We might stimulate the hot-house to its utmost product. *Cui bono?* Can a ship be run forever on forced draught? Do we care to foster the cultivation of Banana, or Pineapple despite every disadvantage of climate! It has been done in Worcester by our late honored associate, William T. Merrifield, to satisfy his own curiosity if it were any way practicable. Do we propose that this Society shall encourage growth of the *Victoria Regia*, because some millionaire of Cordage or Standard Oil fancies it for a green-house pet! Let us be satisfied with the knowledge that Fifty Years ago D. Waldo Lincoln grew and flowered that superb exotic here in Worcester. And all the while bear constantly in mind the significant fact that, while this, our thriving Rural City possesses and might, if it chose, pride itself upon the existence of a vigorous Horticultural Society, the huge, ever-growing metropolis was never able to keep such a Society alive for a twelvemonth. Of the reckless charge at Balaclava the

grizzled veteran of France might well exclaim, "It is superb, but not War." So we,—reminiscent of countless experiment, all based upon the splurge and tommy-rot of—see what a figure I cut! Who recall the dreary days of yore when Mechanics and Washburn Halls, were crammed to repletion with the choice and pick of Decorative and Ornamental Plants, of the plenteous and select Fruits from the prolific Orchards of Worcester County in which Peach and Plum, Pear and Apple contended for supremacy of excellence; but whereto the People did not come, the officers of the Society being alike and solely hosts and guests; we, I repeat, who were there—hewers of wood and drawers of water in the old times,—*Consule Planco*,—ask bluntly what more or better can we expect when our table is spread with a single course,—and that the showy, barbaric, scentless Chrysanthemum! Our Society was founded to grow, *not* to show. Our fathers and founders thought it expedient to meet occasionally that they might observe and compare notes upon the quantity and quality of the harvest, profiting by mutual experience and positive test. They threw their doors wide open, allowing the whole community to derive such benefit as they might from unrestricted observation and study. Yet the Exhibition was a mere incident, upon which the existence of the Society never depended and toward the extravagant promotion of which it was only recently perverted. The closer our approximation to the Circus or Theatre, the wider our departure from the true aim and spirit of Horticulture. Centuries since, strife for the Laurel Crown, or Wreath of Parsley, awoke the most strenuous competition of Grecian athletes. Now,—when Plutus has become our God,—the intrinsic value of a watch measures the degree of athletic devotion. Shall Horticulture sink to a level exclusively mercenary? Shall we advance and promote Floriculture and Pomology, because we love Flowers and Fruit, as we pledged ourselves when we accepted our Charter? Or shall we consult the whims, and dance attendance upon this or that fine lady, who denies nature, avoids offspring, but condescends a blasé stare at some professional monstrosity or natural freak, and tomorrow molly-coddles with equal and

indiscriminate rapture stallion, pug-dog, or tom-cat, whichsoever may, at the moment, monopolize metropolitan fancy!

From the very earliest day that this Society could make awards of substantial value the prevalent, if somewhat selfish, doctrine of protection of home industry has guided and governed its bounty. The requirement was ever strict that all specimens offered for premium should have been grown, by the competitors, on their own premises, within the County of Worcester, for months previous to the date of Exhibition. And yet, without leave first obtained from the Society itself, an exception is now made in favor of the Chrysanthemum. True, premiums payable from the corporate treasury are not proposed to be given to outsiders. But the dole, obtained after supplication by unauthorized agency, is officially held out for lure, under the auspices of this Society and as a part of its formal function. That which we would never consent to do, as a Society, is done indirectly by our trusted servants. If you will tolerate the pun, our action may not be *sub rosa*, since "mum" is the word. Has this Society sunk so low that, for an object deemed worthy of encouragement it must sue, *in formâ pauperis*, for individual alms? Has this Society so far foresworn itself that it must go back upon its assurance and pledge to the General Court, levying an admission fee when it secured partial exemption from taxation upon the plea that the benefits of its Exhibitions, with their resultant instruction, were dispensed to all without money or price!

Your Secretary would put his faith in the Common rather than the High School, where both cannot be had. He would educate the mass, at public expense, instead of a class. He would "advance the Science and improve the Practice of Horticulture," so that each family, in possession of its own homestead, should learn how best to cultivate its area, howsoever contracted. He would have the local Society taught to foster the development of novelty, but none the less to retain all which has approved itself of merit for generations past. He would spread far and wide the knowledge of every discovery, that Horticulturists might profit, the Country through, though the

individual should be obliged to forego his anticipated monopoly. Our usual weekly displays clearly indicate the line that we should draw between the Exhibition that instructs and the mere show that misleads and perverts. For a dozen weeks, in unbroken sequence, the fairest flowers of Summer are displayed upon our tables by our Members, who enjoy and desire no especial advantages in their culture, asking but a fair field and no favor in the struggle for floral preëminence. Pansy, Iris Germanica, Rose or Pæonia; Dianthus or Lilium, in their manifold forms; Iris Kæmpferi, Petunia, or Hollyhock; Clematis, Antirrhinum, Gladiolus, or Sweet Pea; Aster, Nasturtium, Dahlia, and Perennial Phlox! can we not find adequate scope for our energy and skill, adorning home and farmstead and bringing those charming, rugged species to their extreme excellence, without wasting substance and time in forlorn competition with the Florist whose greenhouse is his point of insuperable vantage, and who either grows the plants for his livelihood or hires a gardener to do it for his private gratification! All such are welcome to persevere, if they like, but as for us, Horticulturists, let us temper zeal with discretion, nor voluntarily fool away our time in a hopeless struggle with the vicissitudes of climate and the infinite fecundity of Insects. What have we lost by omitting hot-house grapes from our Schedule? Do not Brighton, Delaware, and Worden, the Rogers' Hybrids in their almost countless variety, more than supply the place of those costly rare exotics? Let us abandon a field wherein we can never be at home, leaving it to the wealthy amateurs of Boston and New York with an assurance of our best wishes, and in full conviction that so can we best serve our own interests and advance the cause of genuine Horticulture. The copious harvest from an ample Orchard is far better than a few choice specimens culled, after extreme labor and pains, from the Gardens of the Hesperides. The first supplies the market and ministers to the hearty, wholesome appetite of the community at large. The latter feebly tempt the languid cravings of the wealthy, whose surfeited life allows but a morbid hunger; and in whom natural taste and relish are destroyed by their customary methods of pampered nutrition.

A Society may hold a show of its especial products, for its own satisfaction; and to determine the comparative excellence of specimens of flower or fruit, displayed upon its tables, without derogation from its dignity or depreciating its legitimate aims. But when it descends to charge a fee for admission, where formerly its doors were thrown wide open; or becomes a suppliant for the bounty of cup or purse; it can no longer pretend to be studious of science from pure love of its aims and ends, nor claim in face of the General Court, as it could aforetime, to be guided solely by a desire to promote the Practice of Horticulture when the attainment of Premiums is so clearly its object! Gate-money yields but inadequate nourishment for the sustenance of a corporation like this, wherefor only honorable emulation should suffice. But Gate-money is not forth-coming; and what then becomes of this latter-day competition, and the stimulus that has grown to be so indispensable! Shall our officers go out into the market-place, saying, "We have piped unto you and ye have not danced!" May not the multitude properly respond, Your tune grates upon our ears! Your measures do not harmonize with our tastes! Nor do its results vindicate your policy!

The Pomologist of this latter day, as he wipes the sweat from his brow, wondering beneath the torrid rays of our August sun wherein he profited to have his home in the temperate zone, takes compulsory note that now, again, after the lapse of an entire generation, Cherry, Peach, Grape, and Pear, succumb to excessive frost following hard upon prolonged drought and the Apple parches, falling from the tree. A. D. 1861, your Trustees voted: "that in consequence of the extreme lightness of the crop of Fruit, of every species, it is deemed advisable to discontinue the Annual Autumnal Exhibition already announced." That necessity enforced itself because of a cataclysm alike elemental and political. The mercury had fallen in early January to minus 30°, which rigorous temperature, abetted and aided by a searching wind, blasted bud, and split tree-trunk wide open. The country was in the first throes of Civil War; and, from one end to the other, our own Commonwealth shivered in the fierce

convulsion. And now once more the mercury falls to minus 15°, and the keen, piercing winds of mid-winter check circulation, threatening life to the very quick. Our Exhibitions do not cease, because they are wisely held in such frequency as to meet the maturity of fruits in due succession. So that it must be a wholesale blight which shall preclude a display at least tolerable. Yet although duly held, we cannot but notice, and noticing deplore, the complete failure to respond to the invitation in our schedules of those delicious fruits of Summer and early Autumn, even if an ample Apple harvest in some measure modifies our regret.

One of our best Orchardists, who does not let his brain lie fallow, and to whom the name of Artemas Ward appeals with a local pride, if not humorous significance, as he cries to Horticulturists everywhere,—"Why are these things thus?" would account for the falling a still-born creation or harvest, whichsoever you elect to term it, by a theory of positive exhaustion! He declares that the trees are worn out. That they have been required to bear barrels rather than bushels, neither care nor labor being expended to reduce the surplus; nor pains taken to see that Hen or Hog eliminate Insects from future calculation as they,—the scavengers of Pomology,—might so well and effectually do if fairly encouraged. Just at the opening of this September he is worried because the Gravenstein,—that noblest of Autumnal Apples,—is rapidly dropping from the tree. And therein is a problem not for him alone, but for all of us who, a year ago, could find no apples worth a second thought obtainable for love or money; but who have cherished fond anticipations of a bounteous harvest in this, the legitimate bearing year, of ample barrels of fruit, copious casks of cider, honest vinegar for our beans, and that value of a thousand Gileads,—the Yankee Pie which responded to the exactions of Philosophy and satisfied Emerson in his more material yearnings. Indeed, and in truth, is not the problem one worthy of solution, nay, demanding it more than most that are a source of perplexity? But does that theory of Exhaustion suffice? If so, the harvest should decrease with each recurring year. Yet, A. D. 1896,

is there not abundant evidence that the yield of Fall and Winter Apples is likely to be excessive, as is usual in what we call the bearing, and know to be an alternate year. Moreover their quality is superior, being remarkably free from external blemish or any serious ravage of insect. Your Secretary is inclining to a belief, in some modification of climate, in so far as the gigantic forces of Nature can be affected by the comparatively puny efforts of man. Thermometer and hygrometer may contradict; but there do seem to be more marked divisions of the seasons into wet and dry than were the rule in times that some of us can distinctly recall. A. D. 1895, there was a protracted, severe drought, for weeks unbroken until its close in an almost torrential rain on the 12th and 13th of October. Is there a worse foe to fecundity, aye, to vitality even than Drought? Is there anything more essential, indispensable even to an ample harvest from Orchard and Vineyard than a copious supply of that element whereof their fruits are so largely constituted? Supplement such deficiency by a sequence of days like those which broke the record for intense heat in mid-August last, and how much vitality is left to challenge the icy blasts of Winter! Summing them up,—excessive crops, burning suns, continued lack of water, deficient supply of manurial nutriment! should there be wonder that

"The earth no longer brought forth grass, or that the herb ceased to yield seed after his kind, or that the tree and vine stopped yielding fruit, whose seed was in itself after his kind!"

The peculiarity of the present season, regarded pomologically, is the general local failure of Grape and Pear to yield an abundant harvest. Perhaps we are not warranted in counting, with absolute certainty, upon the Grape; although during the existing generation the seasons have been few wherein generous clusters of all the choicer varieties have not rewarded our hope and patience. But how shall we explain the almost entire deficiency of Pears,—of varieties that for the lifetime of a majority in this audience, were to be counted upon with quite as much assurance as the precession of the equinoxes,—or the alternations of heat and cold. The trunks of Cherry and Peach, of the Maple even, may split wide open under exposure to extreme

cold; but the wood of Pear-tree is as near iron-clad as aught that vegetates, in gelid contentment laughing to scorn the wildest caprices of the mercury. Yet now, for the first time in more than Thirty Years have these trusty standards, Louise Bonne, St. Ghislain and Washington, failed to yield specimens enough for Exhibition, while honest old Bosc and Winter Nelis are in like significant default. There is no manifest difference, in this respect, between the varieties peculiar to Autumn or Winter. You may tell me to possess my soul in patience, for that all will come out aright by another year. That answer might suffice for the individual; but, as Secretary of a Society reputable and expert as this, I am bound to put you upon inquiry into the cause for this almost entire failure of a fruit, hitherto so uniformly fecund and of unfailing reliance. We assume, from long experience, that in what are styled "odd years," numerically, the Baldwin, in especial among Apples, will withhold its product. But the Pear was never known to sulk, in that way; its prevailing characteristic being its certainty of bearing, and its worst fault that it is apt to yield in profusion each and every year. May we not well ask those who are to succeed us, as Horticulturists, who will possess manifold aids from special science and training that were unknown or denied to their forebears, to search out this all-important problem to the end that Worcester County may count upon its crop of fruit with as perfect assurance from failure as upon its annual harvest *of ice!*

"A little field well tilled!" The tillage may enure to the benefit of the individual owner, as why should it not! or, so rewarding his industry and thrift, possess him of facts wherefrom to build up an improved Horticultural Science. It cannot be charged against your Secretary that, in the long series of Reports which he has been privileged to deliver, from this place, he has ever avowed faith in the worship of Mammon as the whole, or even chief, duty of the Horticultural man. Yet there is no sin in a profit somewhat short of skin for skin, if you have a superfluous harvest to barter; since even priestcraft, whose trade it is to lull uneasy souls, encourages gambling in the chances of attaining futures of bliss. Now I have been shown

a tabulated account of the Income derived from a sale of fruit from a single tree, for a series of years, alike encouraging to the grower and creditable to his personal industry and pomological skill. Bear in mind that the receipts were from a tree of the Beurré Diel, which to many of us has been forbidden fruit since it cracked so hopelessly, yet which, in this particular instance, appears never to have given cause for discouragement.

YEAR.	INCOME.	YEAR.	INCOME.
A. D. 1887,	$17.65	1892,	$14.00
1888,	10.23	1893,	14.50
1889,	17.45	1894,	12.68
1890,	15.00	1895,	12.00
1891,	18.75		

Amounting in Nine (9) years to $132.26, and showing an average of $14.69. I anticipate the incredulity that will attend upon this statement, and can only meet it with an avowal of my faith in its entire honesty, re-inforced by a doubt of any gain to be derived from a deliberate lie in the premises. The more common tendency is to underrate, rather than to magnify, the receipts from one's especial calling. A mention of Beurré Diel can never be made without recalling to mind an old friend, Edwin Draper, who served this Society so long and devotedly as Chairman of its Committee of Arrangements while life lasted; and who always made an especial pet of that variety of Pear. If not of the very highest quality, it makes no false pretenses and, when at its very best, acknowledges few superiors.

Somewhat of an innovation in practice, but an approved fact of Horticultural science, has for years commended itself to your *Secretary* as a step in advance that should be taken by this Society. Almost from its earliest inception, certainly since it elected to live under By-Laws, its Trustees have been authorized to make suitable distribution of Seeds, Scions, &c., that might be presented to the Society. But therein is the same old trouble,—the worm at the bud that saps vitality from its very origin, if inertia may be credited with action or motion. It is the business of nobody in especial and therefore nobody concerns himself to attempt it. In the first place, the custom of presenting scion or seed has fallen into disuse. Now and then a mem-

ber may introduce a new Apple or Pear; but his associates, who observe that it has been awarded a gratuity, are more apt to covet and apply for scions from his slender stock of wood than to send to Ellwanger & Barry who first put it in the market and whose affair it is also to maintain it in stock. Now, how much better for the Society to procure, for distribution, a hundred or more scions of each and every variety of fruit that has other merits than novelty; to provide that they shall be fairly apportioned among members who will agree to engraft them upon suitable stocks and thereafter, as development progresses, to exhibit the mature specimens when they become ripe enough for inspection and test of quality.

It would be safe enough to repose implicit faith in the judgment and *bona fides* of Mr. William C. Barry, and to get him to supply a stated number of scions of varieties of Apple or Pear, upon whose identity and especial characteristics he would be willing to stake his reputation. It is his business now, as it has been for a lifetime; and the fame which he has thereby acquired serves him in good stead in each of his forward steps to assume the place of his honored father. So much for the matter in its commercial aspect.

But in another, and a local point of view, does such a project appeal to us most forcibly. How many of the newer, promising varieties of fruit, that have been shown in our Hall within the last fifteen (15) years, are so widely disseminated as to be safe from extinction? Are there a half-dozen of our Members, who can felicitate themselves upon possession of Earle's Bergamot in full vigor! Its very parentage, to which its real excellence is due, menaces its permanent existence, Belle Lucrative being notorious for excessive fecundity, and therefore containing within itself the germ of disease and the ultimate assurance of sudden death. If we would be more careful in the selection of a stock whereon to engraft that excellent Pear,—very likely not the best variety with which we are acquainted, but most assuredly the best that was ever originated in Worcester; and which not only for its peculiar merits, but also because it owes its origin to John Milton Earle, we might hope confidently to spare ourselves a grievous loss.

In looking around for a most suitable stock, one ever healthy in itself and therefore best promising to transmit its own vigor to its fosterling, your Secretary can think of no variety which he would choose with such implicit trust as Howell. It is native to our soil, was never known to blight, and, although bearing as freely as the female parent of Earle's Bergamot, never fails to develop all its offspring in sound maturity. Your Secretary would try the experiment himself, instead of urging it upon others, had he an idle yard square of land and were he younger. So much at least is certain, that it will be a lasting reproach to this Society to suffer the only variety of Pear originated by one of our members, after infinite patience, a variety of great promise whether you look to fecundity or quality, to perish, leaving no trace.

Apples have been originated, not accidentally, but of set purpose, in close proximity to the City of Worcester, whose merits should ensure their wide distribution; yet which can scarcely be found at all save upon the trees that first bore them. Here or there might be discovered a Worcester Spy, after persistent search. But who has undertaken to propagate the Dawson, which arrested the attention of Charles Downing in the latter years of his life, and became his study before its untimely close!

Superb Peaches have been placed upon our tables, from time to time, grown a-nigh Elm Street in this city, which no one apparently cares to perpetuate by budding; an indifference or neglect that, in former years, governing the action of Horticulturists, might have cost and lost us Cooledge or the Crawfords. Now the question suggests itself if it would not be well worth our while for the Society to purchase all the scions of local varieties of fruit holding out at least fair promise, which the owner might be induced to spare, apportioning them among our Members who would agree to engraft and care for them, and to exhibit their produce in this Hall! Would not such a distribution tend more directly to

"Advance the Science and encourage and promote the Practice of Horticulture"

than the award of an equivalent in premiums, in dreary monotony, upon the same kinds, year after year, although indeed they

would likely be largely increased by such distribution, in the long run, under the guaranty of the Society. In that way also would varieties be more widely diffused, the community becoming gainers since the market would be more freely and fully stocked. I have heard the statement, by men who ought to know, that keen scrutiny would detect new and noteworthy Apples in almost every Town of Worcester County. Perhaps the geese might not all be swans! But neither was the Baldwin so highly accounted when first discovered and scarcely appreciated in its original cow-pasture. In this respect, our farmers are too modest by half and stand in their own rustic light because of their lack of urban cheek! The fingers of both hands will scarcely keep tally of the noteworthy, if not first-class Apples whose origin is traced directly to Worcester County. Would it not repay our efforts to hunt them up; to take care that their scions are generally secured and engrafted; and to determine practically if there shall be no future genesis of new and palatable varieties in other towns than Hubbardston, Sterling, or Sutton; leaving out of consideration Worcester,—in which Architecture is running a close race with those occupations that fructify rather than cumber the ground!

But even then of what use will it be to grow nice and abundant specimens, of anysoever variety, if they are to be stored away,—not to be had when wanted. While this is written, not a barrel of Gravenstein could be discovered along Main Street, by one who would have gladly purchased, in a stretch of a mile. It has been problematical, for long, whether it does not cost dearly to live in Worcester, much more than it ought when you make a just apportionment between civic consumption and rural production. People must know that things exist, and can be had, before they can take a fancy to them; and should find them proffered in plain sight, along public thoroughfares, that they may be tempted to purchase. We hear more than enough glib talk, about Election-time, of the Home-Market! and of how essential it is to manufacturers that they should be fostered upon the pap of Protection! But what kind of a home-market is that where a man is compelled to peddle his fruit from house to house, consuming or wasting more time in petty traffic than was

required for the gathering of his harvest! We have a grand location for a Market-House in this our Worcester; but it cannot be applied to its proper use because of idle dreams of its lofty conversion to the barter of tape and needles! The land appears to have become an object of adoration, a sort of Fetich, wherefrom everything useful is scrupulously tabooed. Let some measure be advocated, of common interest and general benefit, behold this plot of ground, unimproved and unprofitable, is thrust in the way, an obstacle alike inevitable and insuperable. Without a Market-Place we can have no Home-Market, although the smoke from factories should besmirch the entire face of Nature. If we would dispose of our Apples, like everything else, we must let it be known that we have them to sell. But if they are all shipped to England, will it not be too expensive for those of us who wish an occasional barrel to cross over to Covent Garden in their train and quest?

Have Cattle-Shows, which show pretty much everything that was not perpetuated in the Ark; have Horticultural Exhibitions, which minister to an eclectic taste in Flowers or Fruit, lost their attraction? The one exacts the last cent for admission from all upon whom it can lay hands, because it must in its neck-and-neck race with insolvency. The other throws its doors wide open, but sees the same faces each successive week and realizes that its instruction is largely wasted in that dreary monotony of attendance. Newspaper columns are crammed to repletion with advertisements in behalf of the Mammon of Agriculture, responsive to which temptation editorial pens are glibly subservient. Horticulture offers no pecuniary lure and gets perfunctory comment or criticism in the limited space reserved for a bare statement of awards. In point of fact, Floriculture and Pomology command less notice than they did in the infancy of this Society, when the sole method of addressing the public was to be found in the weekly issues of the *Ægis* and *Spy*. If we will be satisfied with the display of our Garden or Orchard produce, nor mind although no one comes to see it but ourselves, it may be that our mission will be as well fulfilled even if it be not so conspicuous. We invite the community to behold, that they may profit by our example. It is not our fault if the option is

neglected, because a foot-race, or a slugging match at foot-ball may be arranged for the same day. If we would but be content, not wearying in well-doing, nor waste energy and substance that we may strike an attitude and pose prominently before the public! We can scarcely avoid holding Exhibitions, since only at such is it possible to note steps in Horticultural progress, assuming always that those steps are in advance and not retrograde. But the presence of a crowd is practically, and ought theoretically, to be matter of entire indifference to us with whom gate-money is matter of supreme unconcern. Our avowed object is to advance the Science and promote the Practice of Horticulture. If a blind generation elect to ride on a political band-wagon, avoiding our apple-cart, we may pity the error of judgment that induces them to lose so much. Yet therein,—because none are so blind as those who *will not* see,—is no reason why we should be diverted from our legitimate purpose, whereof the intent is clear as the light of day, and whose way, if narrow, leads only to the noblest results. An ideal life is depicted as spent under a man's own vine and fig-tree. It is not selfishness that shrinks from the constant, obtrusive itch for publicity which may aid the sale of newspapers but will never construct Eden anew, nor restore the least of its lost flowers or fruits! Our City has been thronged, of late, with parades which are well enough in their way, so long as that way is not the be-all and end-all of their promoters. Yet possibly as useful in the long run is that steady devotion to duty, for its own sake, which seeks rather attainment than the fuss and feathers that are too often made to denote it; and whereof Horticulture contributes as much as any other pursuit to the sum of human happiness.

All which is Respectfully Submitted

[by]

EDWARD WINSLOW LINCOLN,

Secretary.

Horticultural Hall,
Worcester, Worcester County,
Massachusetts, November 4, 1896.

REPORT OF THE LIBRARIAN.

Horticultural Hall, Worcester,

October 31, 1896.

To the Members of the

Worcester County Horticultural Society.

Your Librarian respectfully submits the following report:

The Library has been open every day, Sunday excepted, this year, the same as in the past three years, proving each year by a more general use that it is of great value to those interested in Mycology and Native Flowers and Ferns. Attention is called to the books added the past two years on these subjects. Your Committee on Library and Publication have been fortunate in securing the services of Miss Rice, who has been at work on a Card Catalogue, which will be ready for use February 1, 1897.

The following Books, Periodicals and Papers have been added during the past year:—

Reports of the Commissioner of Education. Vols. 1 and 2, 1892 and 1893. Vols. 1 and 2, 1893 and 1894.

United States Department of Agriculture:

Circular No. 15. General work against insects which defoliate Shade Trees in Cities and Towns.

Field Columbian Museum Publications: Publication No. 6. Report Series. Vol. 1, No. 1.

Annual Report of the Director to the Trustees. 1894 and 1895.

West Virginia Experimental Station. Bulletin Nos. 40, 44.

Connecticut State Board of Agriculture and Experimental Station. Report for 1895. T. S. Gold, secretary.

Transactions of the Massachusetts Horticultural Society. Part 2. 1894.

United States Department of Agriculture. Accessions to the Library from July 1, 1895, to July 1, 1896.

Massachusetts Crop Reports. Bulletins Nos. 1 to 6, inclusive.

Cornell Agricultural Experimental Station. Bulletins Nos. 101 to 121, inclusive.

Hatch Experimental Station. Bulletins Nos. 33 to 41, inclusive.

Hatch Experimental Station. Eighth Annual Report. Jan. 1, 1896.

Meteorological Reports. Bulletins Nos. 82 to 93, inclusive.

Michigan Agricultural Experimental Station. Bulletins Nos. 127 to 133, inclusive.

Michigan State Board of Agriculture. 34th Annual Report. July 1, 1894, to June 30, 1895.

Consular Reports. Nos. 182, 183, 184.

The Natural History of Plants. Vol. 2. Parts 1 and 2. Kerner & Oliver.

Window and Parlor Gardening. N. Jönsson Rose.

The Structure and Development of the Mosses and Ferns. 1895. D. H. Campbell.

Fern Growing. English. 1895. E. J. Lowe, F. R. S.

Illustrated Flora of the Northern United States, Canada and the British Possessions. Vol. 1. 1896. Nath. Lord Britton and Hon. Addison Brown.

Spraying of Plants. Prof. E. G. Lodeman, with Preface by B. T. Galloway.

Elementary Text Book of Agricultural Botany. English. 1893. M. C. Potter.

Horticultural Hand Book and Exhibitors' Guide. English. 1895. William Williamson. Revised by Malcolm Dunn.

Pamphlet. Fertilizer Farming.

Pamphlet. The Brighter Side of Farming.

Directory of the Agricultural and Similar Organizations in Massachusetts. 1896.

Gypsy Moth. 1896. Profs. Forbush and Fernald.

Curtis Botanical Magazine. Vol. 51. 1895. English.

The Journal of Horticulture. English. Vols. 30 and 31. 1895.

British Fungi. Vols. 1 and 2. M. C. Cooke, M. A.

Illustration of British Mycology. 1849. T. J. Hussey.

Comparative Morphology and Biology of the Fungi Mycetozoa and Bacteria. De Barry.

Introduction to the Study of Fungi. M. C. Cooke, M. A. 1895.

British Fungus Flora. 4 vols. 1892 to 1895. George Masser.

Outlines of British Fungology. Rev. M. J. Berkeley.

The Journal of Mycology. Vol. V. Nos. 1, 2, 3, 4. 1889. Vol. VI. Nos. 1, 2, 3, 4. 1890 and 1891. Vol. VII. No. 1. 1891. No. 2. 1892. No. 3. 1893. No. 4. 1894.

Worcester Society of Antiquity: F. P. Rice. Town Records, 1828 to 1832. Marriage Records, 1747 to 1848.

Acts and Resolves of Massachusetts passed by Legislature, Session 1895.

Report of Massachusetts State Board of Agriculture and Experimental Station. 1895. W. R. Sessions, Secretary. Twenty copies for distribution.

Report of Town Officers of Leicester. Feb. 1, 1896.

Report of the Worcester Parks Commission. Nov. 30, 1895. Edward Winslow Lincoln, Chairman.

Transactions of the Worcester Agricultural Society and the President's Address.

Transactions of the 23d Annual Session of the Massachusetts State Grange.

The Index, published by the Junior Class, Massachusetts Agricultural College. Vol. 27. Dec., 1895. From Charles A. Peters.

Valedictory Message. Jan. 3, 1896. Hon. Henry A. Marsh.

Inaugural Address. Jan. 3, 1896. Hon. A. B. R. Sprague, Mayor.

Books received from Miss S. H. Powers: Massachusetts Agricultural Reports, 10 copies.

Modern Horse Book. Dr. Dadd.

Edward Winslow Lincoln: Harvard Graduates' Magazine. Vol. 4. Nos. 15 and 16. Vol. 5. No. 17.

George E. Francis, M. D.: Minnesota Botanical Studies. Bulletin No. 9. Parts 3, 4, 5.

United States Department of Agriculture, Division of Pathology. Bulletins Nos. 2, 3, 6, 7.

Supplement to the General Index of the Agricultural Reports. 1877 to 1885, inclusive.

Bulletin of Bussey Institute. Part 5. 1876.

Bulletin of the Iowa Agricultural College. Nov., 1886.

Ottawa Naturalist. Vol. 2.

Amateur Gardening. Springfield, Mass.

American Florist.

American Gardening.

Country Gentleman.
Florist Exchange.
Farm and Garden.
Gardening.
Garden and Forest.
New England Homestead.
Massachusetts Ploughman.
Meehan's Monthly.
Rural New Yorker.
Worcester Daily Spy.
English:
Agricultural Gazette.
Garden.
Gardener's Chronicle.
Gardening Illustrated.
Bulletin. State Board of Health. 1896. Nashville, Tenn.
Atlas of the City of Worcester. L. J. Richards & Co. 1896.

All which is respectfully submitted.

ADIN A. HIXON, *Librarian.*

REPORT OF THE TREASURER.

The Treasurer of the Worcester County Horticultural Society herewith presents his annual report for the year ending Nov. 4, 1896. The report shows a satisfactory condition of the Society's finances, the receipts during the year having been enough to allow of the reduction of the permanent loan $2,000. The income from the rent of the Hall shows an increase of about $400 over that of last year.

The receipts and disbursements have been as follows:

Dr.

1895.			
Nov. 5.	Balance as per last report,	$1,292.96	
1896.			
Nov. 3.	Receipts to date:		
	From rent of stores,	$5,750.00	
	From rent of Hall,	4,801.33	
	Membership fees,	88.00	
	Chrysanthemum exhibition,	78.20	
	For tickets to annual banquet,	135.00	
	From the Dewey Fund, for books,	17.64	
	Interest on bank deposits,	61.44	
	Mrs. James A. Norcross (prize for Chrysanthemums),	24.00	
	Mrs. James H. Wall (prize for Chrysanthemums),	10.00	
	Total,		$12,258.57

Cr.

1896.			
Nov. 3.	Payments to date:		
	City taxes and water rates,	$ 796.35	
	Premiums paid,	1,722.68	
	Paid the Judges,	150.00	
	Paid for coal,	225.42	
	Paid for gas,	948.02	
	A. A. Hixon (expenses at hall),	584.93	
	For salaries,	2,008.31	
	Interest on mortgage loan,	608.82	
	Paid on mortgage note,	2,000.00	
	Paid on account of banquet,	231.85	
	Printing and stationery,	291.48	
	Books and periodicals,	196.13	
	Repairs, etc.,	163.73	
	Total,	$9,927.72	
Nov. 4.	Balance of cash,	2,330.85	
			$12,258.57

THE F. H. DEWEY FUND.

Balance as per last report,	$1,017.64	
Interest on savings bank deposit,	40.20	
	$1,057.84	
Paid for books and periodicals,	17.64	
1896. Nov. 4. Balance of fund,		$1,040.20

Respectfully submitted.

NATHL. PAINE,
Treasurer.

Nov. 4, 1896.

The undersigned, Auditors of the Worcester County Horticultural Society, hereby certify that they have examined the accounts of the Treasurer and find the same to be correct and properly vouched, and that the cash balance is accounted for.

HENRY L. PARKER,
F. H. CHAMBERLAIN,
Auditors.

In Memoriam.

Horticultural Library,
Worcester, December 16, 1896.

Special meeting of the Trustees to take such action as might be deemed appropriate upon the death of the late Edward Winslow Lincoln, Secretary of the Society.

President O. B. Hadwen in the chair. Meeting called to order at 2.30 o'clock P. M.

President Hadwen said—

Gentlemen of the Trustees:—

We notice with profound regret and painful solicitude the absence for the first time for thirty-five years of the stalwart form and see the vacant chair of our late Secretary. It seems hardly possible that one so large hearted, so useful, so much esteemed and respected should have thus been summoned across the dark river, nearly the last of his generation, but the first of our Society. One who has been always present upon the recurrence of the annual meetings of the Society and Trustees.

The science, the practice, and the literature of horticulture has been vastly augmented by the benefactions emanating from his annual reports to this Society. Horticulture has gained in solid development and its interests widely extended by his untiring work. His accomplished pen has marvellously well chronicled the past,—who shall answer for the future?

We meet to-day to express our deepest sorrow at our loss, and our sincere condolence in this sad bereavement to his family; and all citizens of Worcester saddened by a sense of personal bereavement extend their heartfelt sympathy.

George E. Francis, M.D., offered the following resolutions:

As Trustees of the Worcester County Horticultural Society we desire to place on record our deep sense of the great loss sustained by ourselves, the

Society and the community in the death of our late Secretary, Edward Winslow Lincoln.

For thirty-six years he served this Society in his official capacity in the most faithful, untiring and absolutely unselfish manner, giving without stint all that was asked of his time, his learning, his excellent judgment and the vast experience stored in his remarkable memory.

It is useless to attempt to recall all that he has done for us; it is enough simply to state the plain fact that in every advance which our Society has made during the memory of most of us, in every worthy effort to enlarge our work, our resources, and our influence, he was always in the van, in his own personality combining the qualities of guide, pioneer and leader. Positive and clear in his ideas, which he was ready to express in pure, racy and vigorous English; his mind furnished with an accurate knowledge of what others had done for horticulture in the past and are doing for it to-day; always ready to welcome a suggestion for an improvement; always eager to give credit for good work, but always hating a sham; always faithful to his official duties,—we may not expect again to see his equal.

We desire also to offer our tribute of admiration and gratitude for his unexampled and magnificent work in developing our system of Public Parks. To him more than to any other man is due whatever beauty the public places of Worcester can show.

The resolutions were adopted by a rising vote and the Secretary *pro tem.* instructed to send a copy to the family of our late Secretary. Also, to each of the daily papers.

Further remarks were made by Hon. Stephen Salisbury, Hon. Henry L. Parker, James Draper and Arthur J. Marble.

Voted, and the Secretary *pro tem.* instructed, to decorate with an ivy wreath the portrait of our late Secretary kindly loaned for the purpose by the Artist, Henry E. Kinney.

ADIN A. HIXON, Secretary *pro tem.*

TRANSACTIONS

OF THE

WORCESTER COUNTY

HORTICULTURAL SOCIETY,

A. D. 1896-97.

PART II.

Worcester, Mass.
PRESS OF CHARLES HAMILTON,
311 Main Street.
1897.

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WORCESTER COUNTY
HORTICULTURAL SOCIETY.

14th January, A. D. 1897.

ADDRESS

BY

O. B. HADWEN, President.

Subject:—The Best Disposition of Fruit in Heavy-Bearing Years.

The bearing of 1896 was perhaps unprecedented for the production of apples, amounting to between 50,000,000 and 60,000,000 barrels. What to do with this tremendous product has puzzled the whole apple-producing world. The home market has proved utterly inadequate for the supply, and prices have been ruinously low. The foreign market has been glutted, and those who have sent the fruit abroad have in most cases been disappointed. Apples today are as low in London as they are in Boston. Our exporters have sustained severe losses, and on the whole those who have sent apples to England this year have lost money.

But now, what is the best way of disposing of our immense crop? Perhaps it would be better for the grower to select the very best for the market and use the rest to feed to horses and cattle. It is well known that apples are a nutritious food when properly fed. A peck of apples over which has been scattered two quarts of meal, is a good, nutritious feed, and as good for cattle as apple pie or apple sauce is for man. I have fed thousands of bushels to my cattle, and I have always felt that they were worth at least fifteen cents a bushel to me. If horses, for instance, are fed two quarts of apples a day or even more,

they will be better off in every way. It is well known that during the prevalence of the epizoötic among horses a number of years ago, apples were recommended as the antidote, and that the horses fed large quantities of apples were the ones that generally pulled through.

That apples are cheap does not seem to increase the consumption. Indeed, dealers tell me that they do not sell so many apples when they are so ruinously cheap as when they are higher. We have never seen a season before when there was not some outlet for the big apple crop. But this year the enormous bearing of the trees has been universal throughout the apple-bearing belt. It is only by a rise of price that the market will have a tendency to be stimulated.

The market demands quality rather than quantity and to supply this many of our apple growers have enlightened themselves regarding the best methods of growth, with a resulting increase in results. There are many conditions which contribute to the best growth of the fruit. Judicious pruning will tend to increase the quality and decrease the quantity. Then the picking, handling and storing of apples require good judgment. They should be picked by hand, carried in boxes or barrels into the cellar immediately and kept at a nearly uniform temperature. It should be remembered that apples that are grown under a higher state of cultivation require the most care in successful keeping.

There is no vegetable or fruit produced any more readily or cheaply than the apple, a fact which accounts for the market being glutted with it at times. A well-trained, properly cultivated apple tree is capable of producing ten barrels, and there is nothing else that will yield the same quantity if grown on the same patch of land.

21st January, A. D. 1897.

ESSAY

BY

WILLIAM H. SAWYER, Worcester.

Theme:—Incidents of Travel in Europe.

Chester is the only walled city now in England, and many of its buildings are at least 1000 years old. The Duke of Westminster, living only a few miles out of Chester, has the most beautiful residence in all England, and is the most wealthy duke in the land. It is worth a trip to Europe to see the Duke of Westminster's gardens. I have seen pinks and roses there that were as large as saucers, and much larger than any I have ever seen in this country. He has the finest herd of horses in all England; his stables are like palaces, and fit for any millionaire to live in. The drive from Chester to his estate is about five miles, and one of the most charming in England. A great deal of the ground he uses for his own homestead, and the rest he rents to outside parties for farms. He has a lot of deer in charge of wardens, and raises his own pheasants and grouse. These are hatched under hens, and after being brought up are turned loose in his domains; thus his own private hunting-ground is always well stocked with game. We were fortunate enough to be accorded permission, not only to go through the grounds and gardens, but the palace as well.

Victoria Park is kept well mown by a flock of Southdown sheep that are perfectly tame and never are molested by either children or dogs. We have no such grass as you see in England. The grass is always green and looks well. The trees in England are scattered promiscuously over the fields. They grow as large at the butts as ours, but they do not reach so high. The grass is just as green under the trees as anywhere else.

Coventry is the only city in all England that has electric cars. It

was in Coventry where the famous colored cathedral glass was made years ago, the manufacture of which has now become a lost art.

There are many reasons why the roads of England are in better condition than our own. It was on the drive to Coventry that we came across our first macadam road. The stones are all cracked by hand, as labor is cheap there. They are kept in good condition by constant repair, and in our drive to Coventry we came across three steam rollers in a distance of five miles. The conditions in England are very different from what they are in this country. They do not have the severe frosts we have here, nor do they have the heavy teaming.

To my mind some of the streets in London beat any in the world, not excepting Paris. They dig deep and make a firm foundation of cement, upon which they place hard wooden blocks, and the combination makes the nicest streets. There is no digging up of streets constantly for sewers, and so they can keep in good condition. The cabs in London are all rubber-tired, and the horses do not have calks in their shoes. Outside of the busiest part of London we saw some streets that were block-paved, but they were in better shape than any we see here.

Warwick is the finest castle remaining today in England. Another fine castle is Windsor castle, which has beautiful parks, and although they are owned by the crown they are open to the public. Indeed, no country seems to have so much ground for pleasure as England. All the people owning large estates are very liberal, and always allow the general public to enjoy their parks and groves. There are no signs "Keep off the grass," such as are so often seen here.

The series of parks in London is immense. One of the best known is St. James Park, although it is not so large as some of the others, and contains only about fifty-nine acres. In the very centre of it is a moat similar to that at Elm park. The park is used mostly for promenading and for crossing from one section of the city to another.

One of the largest parks in London is Hyde Park, having an expanse of 390 acres. This resort is used largely for driving. A road encircles the park, and on almost every afternoon most of the nobility may be seen there. One day I saw at least five hundred children, some with their nurses, playing on the grass in the park. That is the way, I think, our parks should be used, and it is my belief that we are inclined to guard ours too closely. London is well supplied with parks and they are kept for pleasure, not to look at. Those who think that London children cannot get much fresh air, are greatly mistaken.

Another thing that attracted my attention was the condition of the English horses. I did not see a poorly-fed horse while in England, neither did I see a horse with a full tail. Cab drivers seldom whip their horses, but on the other hand give them the best care and attention, and the horses show it. Exactly the contrary is true in Paris and the whole of France, where little feeling is manifested for the horse by those who use him daily for the more menial duties.

Crossing over the English channel we arrived in France, and as soon as you strike French soil you notice a radical change from England. The land is not so thoroughly cultivated, nor are the people so thrifty. But instead of the London fog it is almost always sunshine in Paris; the people partake of the climate and are light, gay and happy.

In Belgium the thing that most impressed me while there was the way in which the women had to work. It is a shame to see the drudgeries that are put upon the women. The peasant women go to public market each morning with their dog-carts loaded with vegetables. There they pitch their tents and sell their wares, after which they trudge back home. The women have dark and coarse features. The peasant class knows no more about good living than we do about economy. They live largely on bread and beer, a loaf of bread and a can of beer furnishing their only sustenance for the day.

In Holland the women also do a great deal of the work. All through Holland farming districts the house and barn are connected, the front part being for the people and the rear part for the cattle. In one house that I was in, the family and the cow lived in the same room, but this is of course an exception. The Dutch are a thrifty, hearty, kind-hearted people, and look a great deal like English, and many of them speak that language as well as they do their native tongue.

4th February, A. D. 1897.

ESSAY

BY

HENRY H. CHAMBERLIN, Worcester, Mass.

Theme:—Irrigation as a Means of Fertilization.

Mr. President, Ladies and Gentlemen of the Society.—I propose to read to you a paper on Irrigation and High Culture. I have chosen this theme, partly because of its great interest and importance; and partly because I had already given some attention to it, and had once read a paper on the subject to a local society, whose members, if any are present, will pardon me for again bringing it to their attention.

I may say that if I had been aware of the contract I had undertaken, I would not have tried to boil down to a single paper the vast amount of information on these subjects that has come under my notice. I am amazed to find what large books it takes to hold what I don't know.

In order to show the vast importance of irrigation to the farmers and gardeners, I have made an abstract of a table sent me from the Bureau of Agriculture at Washington, giving the percentage of water in many of the ordinary products of the farm and garden; and this will serve to introduce the subject with which I propose to attempt your entertainment and possible instruction.

And when it is known that "more than half the human race subsist upon the products of Irrigated Lands," the subject is seen to be a matter of paramount importance.

As showing its appreciation by the practical western farmer, it is related that a clergyman travelling through western Kansas, arrived in midday, at a farm showing evidence of abundant prosperity; after partaking of a hospitable meal, he piously remarked to the host, "I notice that you have very abundant crops; you should be very grateful

to Divine Providence;" to which the farmer replied: "Stranger, we don't care nothin' for Divine Providence here; we're under the Company's Ditch."

The following is the table referred to showing percentage of water in plants, and some other things.

Apples, gooseberries, currants, plums, strawberries, etc.,	77 to 83.	Oats in flower,	81.
Potatoes,	71.86 to 74.	Oats in seed,	4.68 to 20.80.
Beet Root,	82 to 88.	Melons,	90.38 to 94.
Beet leaves,	90.50.	Peas in flower,	81.50.
Carrots,	85 to 89.	Pumpkins,	90.32 to 95.40.
Carrot leaves,	82.20.	Rye in flower,	72.90.
Cabbage,	80.67 to 92.51.	Rye in seed,	6.85 to 18.18.
Cucumber,	95.20.	Sweet potatoes,	71.86 to 74.
Asparagus,	93.75.	Turnips,	89.46 to 92.
Lettuce,	94.14.	Wheat in seed,	5.33 to 14.14.
Bananas,	74.	Barley in seed,	4.53 to 19.33.
Maize in flower,	82.20.	Onions,	85.90.
Maize in seed,	4.68 to 22.20.	Squash,	97.

Fluids.

Lager beer, 99.50.

California wine, 75.

Animals, including man, 71 per cent.

Total abstinence people a little more.

Milk—not determined—depending upon various considerations. (City water.)

FOREIGN IRRIGATION. INDIA.

Before inquiring what has been done in our own country, it may be well to recur to the history of irrigation in other lands.

Irrigation has been practised in India for thousands of years; and it is not too much to say, that without its use, India would long since have become unhabitable and unhabited.

Several years ago Professor Herbert M. Wilson visited India, with a view to compare the systems of irrigation practised there with those in use in this country, and adopt any improved methods he could find. His report, covering 200 pages of the "Report of the Geological Survey" of Major Powell, for 1891, shows that the Government of India has been alive to the importance of the work

and gives promise that the periodical famines of that country will soon belong to the history of the past.

Without attempting to give any adequate idea of the great works achieved, and in progress there, it may be stated that at the end of the year 1888 there had been completed in India 5,520 miles of main canals, and 17,150 miles of tributaries, irrigating over 10,000,000 acres, besides minor works watering 2,000,000 acres more.

IRRIGATION IN EGYPT.

The lands of Lower Egypt, as is well known, are annually enriched by the overflow of the Nile, which every year leaves a deposit of silt that keeps the soil constantly fertilized: but if this deposit becomes dry and baked it is no longer useful, and the crops fail; so that for many centuries the inhabitants have resorted to various remedies. At the present time the Government is largely engaged in this work. In 1885 the "Pasha" made an agreement with the Irrigation Society of Behera, by which it undertook to pay $210,000 a year for thirty years for a supply up to a certain level; with a maximum of about 2,604 cubic feet per second at low Nile, lifted by two powerful steam-pumps into the canal of Behera; besides which, "In 1864 the number of wooden water-wheels used in Central and Lower Egypt was about 50,000, turned by 200,000 oxen, and managed by 100,000 persons, who watered 4,500,000 acres.

IRRIGATION IN WESTERN AFRICA.

Perhaps the most wonderful feat of irrigation is that of a portion of the desert of Sahara. This desert occupies a large portion of Western and Northwestern Africa, lying just south of the provinces of Morocco, Algiers, Tunis and Tripoli, and covers an area of fifteen degrees north latitude by twenty-five degrees of longitude, including many millions of acres of barren sand with an occasional oasis; it has been for thousands of years looked upon as the barrier to commerce and the terror of travellers, who have sometimes been overtaken by its blasting, shifting sands and buried beneath them. All New England school-boys remember the old conundrum: "Why do the Arabs that traverse the desert of Sahara never go hungry? Because they always live on the sand-w(h)ich-is under their feet." It was simply a sandy desert, traversed only by occasional merchant caravans, on the constant watch for freebooting Arabs.

But lo! the magic change! All the southern half of Algiers, comprising 330,000 square miles (211,200,000 acres), is beginning to be

put under successful cultivation, by means of Artesian well irrigation. There are now over 13,000 wells in full operation, ranging in depth from 75 to 400 feet; the water flowing from them is collected in reservoirs, from which it is conducted by mains and laterals over the land. It is estimated that 12,000,000 acres have already been reclaimed, and this area is under cultivation. As a result, Algiers has become a great wine-producing country, about 120,000 acres of the old desert being planted to the vine; growing immense crops of grapes by means of irrigation, thus literally turning water into wine, without a miracle.

IRRIGATION IN AMERICA IN EARLY TIMES.

Irrigation was practised on this continent as long ago as when Cortez made his raid on Mexico, where he found the Pueblo Indians and other tribes raising immense crops of Indian corn by means of their crude methods of irrigation. In California the early Franciscan monks carried on the practice extensively, from the first establishment of their missions. These early methods were crude, imperfect and wasteful; enterprise and science are applying new methods in such a manner as to utilize to the utmost the abundant means of fertilization which nature has made available. And it is in our own country that the full benefit of irrigation, as the handmaid of Agriculture and Horticulture, is to be demonstrated.

The Geological Surveys, conducted by Major Powell, report the "Arid region of the United States to contain 1,340,000 square miles, equivalent to 857,600,000 acres; but that does not include all the area where irrigation is or should be used, and where it must be practised in the near future."

This vast area includes a region where, except little places on the mountains, agriculture is practically impossible, year by year, without an artificial supply of water. If we include all the area where agriculture is dependent in whole or in part on irrigation, one-half the land in the United States, exclusive of Alaska, would be embraced therein. Of the above area it is estimated that about 500,000,000 acres can be reclaimed by irrigation.

Mr. Bronson, testifying before a committee of Congress, makes the statement that in Texas alone 1,500,000 acres can be reclaimed by the judicious use of water. The Geological Report for 1890-91 states that there were designated for reservoir sites up to date of the report, some one hundred and fifty locations; of these, 32 were in California, 46 in Colorado, 28 in Montana, 37 in New Mexico, and 2 in Nevada.

What have been added since cannot be readily ascertained. The canals and irrigating sluices already dug and in process of construction cannot be ascertained, but may be reckoned by the hundred, and the immense products obtained from them are immeasurable.

In the State of Washington, the Northern Pacific railroad is building a canal sixty miles long, to be fed by water from the Yakima River, at a point below that at which the water issues from the mountains. This canal, or ditch as they call it, will moisten thousands of acres that were once selling at $1.50 per acre, but are now held at $45 per acre. With the sale of these lands, stock in the irrigation company is offered, so that when the land is all sold, the stock will be owned by the farmers. A second canal, 250 feet higher, is contemplated, and added supply of water is expected from the large lakes on the eastern slope of the Cascade Mountains.

It was stated before the Congressional committee that 1,000,000 acres could readily be irrigated by the Rio Grande alone, and that the area might be indefinitely increased by proper storage and careful use.

In Calusa County, California, there are two classes of lands that require irrigation: First, land which will yield crops without irrigation, but which would double their crops under the influence of a regular supply of water; Second, desert lands which will yield nothing at all without an artificial application of water, either from irrigation works or artesian wells, but will yield heavy crops under irrigation, wheat producing 40 to 42 bushels to the acre. In Las Cruces, New Mexico, their crops are corn, oats, barley, wheat and sweet potatoes; with irrigation they cut 6 tons of alfalfa to the acre; grapes and all fine fruits grow abundantly; some of the vineyards produce 16,000 to 24,000 lbs. of the finest grapes to the acre. The same ground not irrigated produces nothing. In New Mexico it is estimated that ten acres of irrigated land are more productive than forty acres without irrigation.

ARTESIAN WELLS.

Another source of water supply already utilized to a considerable extent, and rapidly increasing, is found in the Artesian wells; these have been driven at various points, and in the great valleys afford a copious supply of water, but on mountain slopes they are useless. Wells of this kind have been procured in great number in California, in Riverside and in the San Joaquin Valley; others have been found in the desert of Utah. They are also found at various points in Mexico. But the greatest number of these wells, with the most abun-

dant supply of water, is found in "the famous San Luis Park of Colorado." Owing to the large area of mountains surrounding it, this has an unusual number of "lost rivers," supplying the subterraneous water in abundance. Already over 3700 flowing wells have been sunk.

IRRIGATION IN NEW JERSEY.

In the New Jersey Station irrigation was not begun until demanded by drought in the fall, and was continued from September 17th until the crops were harvested, varying with different plants from October 4th to 28th. The water was distributed in channels between the rows from the city water-works by means of inch faucets and hose.

In the case of egg-plants and tomatoes no substantial results were noticed. The result of irrigating bush-beans was very satisfactory, the yield being largely increased and the quality superior. The period of fruitage with peppers was prolonged and the yield nearly doubled. The soil of the celery plat was not the most favorable, but the yield of the irrigated plat was *more than doubled*.

The market value of the irrigated plat was *eight times* that produced without the aid of artificial watering. The loss from superfluous leaves and roots in preparing the plants for market was 28 per cent. in the irrigated plats against 40 per cent. in the non-irrigated.

When it was known at my house that I was to read a paper on irrigation, I was instructed to talk especially on the necessity of planting trees as a means of saving the streams; but as I have no reliable data on the subject, I omitted to discuss it; but it is perhaps the most important matter at present demanding our attention. Perhaps no more patriotic enterprise, or one eventually more profitable to the farmers than a few acres of the roughest portion set to growing trees; it would conduce more to the public health and happiness than any large contribution in money. In the meantime, and while the trees are growing, I think the farmers would be justified in any seeming profanity if they should "dam" every drop of water that rolls down their hillsides.

"May I be allowed to add a few words to Mr. Chamberlin's statements about irrigation, because it seems to me he does not go to the root of the matter. In order to be able to irrigate land, the first requisite is to possess the water to irrigate with; and in order to possess the water, it is of the utmost importance that some measures should be taken to ensure a never failing supply. In other words, the State of Massachusetts should appoint a competent Forestry Commission, who will do for the State what the United States Government is doing for the national reservations. Mr. Fernald says, 'without forest management no rational water management is possible.' Two centuries ago the

interior of the State was almost an unbroken expanse of woodland; now how rapidly the forests are disappearing under the injudicious use of the axe. It is probable that the removal of so much standing wood has had a bad influence on the climate and surface of the earth. It is estimated that forests, in order to keep up the right conditions of soil and climate, should occupy one quarter of the land. To quote from a friend who made a study of the subject, 'they affect the temperature, the movement of air-currents, the character and succession of the seasons, the amount of rain and the manner of its fall, as well as its action for good or harm upon the soil.'"

The influence of forests in protecting the water-supply is well illustrated in the case of Greece. In ancient days she possessed 7,500,000 acres of forest. To-day she has hardly 2,000,000 acres, and the scarcity of water and the injurious climatic effects are traceable to the destruction of the trees. In France when the forests had been felled or destroyed by fire the government expended more than a million dollars annually for their restoration. Palestine, two thousand years ago, was a well wooded country, now it is mostly sterile and desolate. Its forests are hewn down, its soil washed by the torrents of a thousand winters, its river courses dried. In the centre of the great desert of Sahara, Champollion, the French explorer, found traces of old rivers and tree-stumps buried six feet deep in burning sands. "And so," he says, "this desert may once have been a region of groves and fountains, and the abode of happy millions. The hand of man has produced this desert, and I verily believe every other desert on the face of the earth."

I should like to quote many other instances of the disastrous effects of forest destruction nearer home, some of which are mentioned in Mr. Wilson Flagg's little book published some years ago, called the "By-Ways of New England"; but I will not take your time, which may be more profitably occupied. I will only add that I think the preservation of the forests is a subject deserving the consideration of every person who has the well-being of future generations at heart, or who wishes to retain the beauty and comfort of the State we are so proud of. To accomplish this end, a State Forestry Commission is of the utmost importance. G. R. C.

Some statistics are given in these reports comparing the crops on these irrigated lands, in the arid regions, with those of the most productive regions in the rain belt, showing a higher average in the former; in the cultivation of fruits especially, the irrigated lands give a most favorable comparison. On one fruit farm in the arid region, the income for 1890 was from $211 to $600 per acre. Much attention is now paid to irrigation in parts of Europe, but I will mention only a single instance: Below the city of Milan, in Lombardy, 22,000 acres of grass land irrigated by the waters of the river, a tributary to the Po, which carries the sewage of the city, yield from 8 to 10 tons of hay to the acre, while some separate meadows produce a crop of 18

tons to the acre. In the face of such statements it would seem that our friend Mr. Pond must "pale his uneffectual fires."

The fact last mentioned, the use of sewage, suggests the subject of high farming, or as it has been called *intensive* farming, as contrasted with *extensive* farming; and here it may be mentioned as pertinent to our subject, that 100 years ago, or a little more, the number of landed proprietors in France was 150,000; at the present time there are over 4,000,000. In view of the change in the condition of the great majority of the French people, it is not strange that the enthusiastic philanthropist, Wendell Phillips, astounded and shocked the dilletanti of Boston and Cambridge when, in his *Phi Beta* oration, he declared that the French Revolution was "the greatest, the most unmixed, the most unstained and wholly perfect blessing Europe has had in modern times, unless we may possibly except the Reformation and the invention of printing."

And so far have they carried the intensive method that, near the city of Paris, the rent of some market-gardeners is $126 per acre. Even at this rate the French market-gardeners pay an "octroi" on all their products that go to Paris, exporting largely their crops to London. And it is also true that while in England, Germany and Russia the farmers say that wheat raising is unprofitable; while even in New England and New York we have given up wheat raising as a lost art, —yet in France on their small farms they have doubled the acreage and quadrupled the yield of wheat within the last 50 or 60 years.

I will mention one more instance of successful high farming, that of the district of Lafalle in East Flanders. The population consists of 30,000 farmers, who, besides raising their own food, export agricultural products which enable them to pay rents to the amount of $15 to $25 per acre. Their regulation crops are from four to five times as large as those of the fertile lands of Texas, Georgia and Illinois. On their little territory of 37,000 acres, two-thirds of which area is under cereals, flax and potatoes, they keep 10,720 neat cattle, 3,800 sheep, 1,815 horses and 6,550 hogs. The district contains a population denser than that of England: yet, notwithstanding the ever-increasing rents, all the inhabitants are well fed and well-to-do; and this is simply owing to high cultivation.

CULTURE UNDER GLASS.

I have left but little time and space for this branch of the subject, and will allude to it very briefly. We are apt to think of those Channel islands, Jersey and Guernsey, as only the habitat of the cows that are raised there, and otherwise of no importance; whereas their fields

and gardens show results as much ahead of ordinary farming as Hadwin's Guernseys or Kendall's Jerseys go ahead of a Texas stump-tailed heifer that gives a pint of blue milk a day when in full flow.

In the Island of Jersey, which is still a land of open field culture, its farmers obtain from their land twice as much as the best farmers in England. This island, like the suburbs of Paris, is a land of market-gardening, and it has lately developed largely into greenhouse culture; there are greenhouses all over the island, they rise amid the fields and from behind the trees, and they are piled upon one another on the steep slopes of the hills.

The island cultivates 28,717 acres in roots, and nourishes its population of about two persons to the acre; the chief crop consists of potatoes, of which they grow about 70,000 tons each year, equal to 2,613,000 bushels, which would represent a money value, to-day, of 2,000,000 dollars; they export, mostly to England and America, 1,500 cows each year. So that, altogether, they obtain agricultural products to the amount of $250 per acre, for each acre of the surface of the island. And yet Jersey hardly knows what intensive culture means; to learn this, one must go to the sister island of Guernsey, which nourishes 1300 persons on each square mile. Guernsey, like the suburbs of Paris, is a land of market-gardening, which has of late largely developed into greenhouse culture. All over the island, especially in the north, wherever you look you see greenhouses; they rise amid the fields and from behind the trees; they are piled upon one another, on the steep slopes of the hills facing the harbor.

At present Guernsey exports every year 500 tons (say 1,120,000 lbs.) of grapes, representing a money value of $200,000. A Mr. Bashford has vines (under glass) covering 13 acres, in regard to which, a well-known English writer says "the money return of these 13 acres far exceeds those of an English farm of 1,300 acres." The last year's crop was 50,000 lbs. of grapes, 80 tons (179,000 lbs.) of tomatoes, 60,000 lbs. of peas and beans, besides other crops. Guernsey cultivates 28,000 acres in roots, raising of potatoes alone 2,600,000 bushels, with a money value of over $2,000,000; they export 1,500 cows each year; and altogether they produce $250 for each acre of the island.

When one walks through these glass-roofed gardens which never know failure, and which yield successive crops throughout the year, one is reminded of the gardens of Alcinous, wherein "the fruit they bear falls not, nor ever fails in winter time nor summer, but is yielded through the year. The ever blowing west wind causes some to swell and some to ripen; pear succeeds to pear; to apple, apple; grape to

grape; fig ripens after fig. At these gardens' farthest bounds were beds of many plants that blossom all the year."

ELECTRICITY.

After preparing this paper I found a paper on Electricity as applied to Horticulture, which threatened to nullify all I have said on the subject in hand, and I have thought it might be interesting to give a short synopsis of it. Passing over the account of the use of electricity as a dynamic power in horticulture and agriculture, I will quote the statement of some of its direct effects on vegetation. One experiment of applying an electric current to the seeds and afterwards to the soil, resulted in raising radishes 17 inches long and 5½ inches in diameter. Some five years ago the faculty of Cornell University began some experiments, with most gratifying results; early vegetables, such as spinach, radishes, lettuce, etc., were brought to maturity in about half the time usually required.

Four years ago, Mr. Rawson, a market-gardener in Arlington, noticed that the flowers in his garden which were subject to the electric lights, grew rapidly and vigorously, outstripping all others in the garden; so he set up in his large hothouse a similar light. The result was that the early vegetables grew in a much shorter time than in the ordinary way, while the quality was much superior, and the profits of his business were increased from 25 to 40 per cent.

The French have put in practice a process of gathering electricity from the atmosphere, which is done by laying a network of wires in the garden, and connecting them with a copper wire that runs to the top of a pole 40 feet high, surmounted by a collector, insulated by a glass knob. The height of the pole enables the collector to gather the electricity in the atmosphere from a large area, and when transmitted to the garden through the wires it produces better results than the electricity generated from a dynamo. By applying the arc-light directly to the plants, their growth was so accelerated that many ran to seed before edible leaves were formed. I have never learned of but one parallel to prematurity like this: it was that of a child named Heinecken, who knew the incidents of the Pentateuch at the age of one year; had mastered all of the Sacred History at two years; and was intimately acquainted with modern and profane history and geography, and spoke French and Latin, besides his native tongue, at the age of three years,—at the age of four, he died of old age.

Ladies and Gentlemen: Thanking you for your kind attention I will close by reading a letter from one who has experimented with water in this State:—

Fitchburg, Mass., Feb. 2, 1897.

Mr. Chamberlin,

Dear Sir:—

Yours at hand and would say my tests the past year in irrigation were limited, as I did not get into line till a little late, but what I did was very satisfactory.

My supply is city water, price 10 cents per 1000 gallons. I connected with the city main by 3-inch steam pipe, above ground; from this a 2-inch pipe runs the length of my fields on the upper side, "across," so as to irrigate each and every alley. Rows are five feet apart and I allow each row to mat three feet wide so you see I get a two-foot alley, and in this alley make a gutter three inches deep in which to irrigate "down hill." Now this two-inch distributing pipe is drilled and tapped every five feet and a common sink faucet screwed in, through which I adjust the size of stream wanted to run to the end of the rows continuously, and when once adjusted I do not change the faucets, only shut off water or let it on at the connection with the 3-inch supply by a valve. So you see it is only a minute's work to start the plant to work; then it takes care of itself.

I have one field of five acres on which can be put 15,000 gallons per hour as long as you want it and with hardly any attention. Have run these streams in this gutter over 500 feet, but do not like to do it; rather have shorter distances, which I easily arrange for if rows are too long. On my five-acre field my 2-inch distributing pipe is 900 feet long, with a faucet every five feet, so you see it takes a lot of water to supply it, but at my farm I get 250 feet head. In 1895 my crop was 40 per cent. No. 1 and 60 per cent. No. 2, *without* irrigation; in 1896, 70 per cent. No. 1 and 30 per cent. No. 2, *with* irrigation. Am well satisfied with it so far. I noticed the irrigation kept the fruit growing and did not allow it to ripen off early and small.

Very truly,

A. A. Marshall.

11th February, A. D. 1897.

ESSAY

BY

ELIJAH W. WOOD, West Newton.

Theme:—New Fruits, and New Methods in Fruit Culture.

The fruit crop the past season has been exceptional and unusually irregular. There was no material injury to fruit-bearing plants or trees during the winter 1895–96, except to the peach trees, on which the fruit buds were almost entirely killed throughout New England. Later in the season the strawberry, through some unfavorable influence, while the vines were apparently healthy and vigorous, did not in many localities produce the usual quantity of fruit.

The apple crop was exceptionably abundant. The over-supply for the home market has caused the shipment of an amount far in excess of any previous year to foreign countries; with the result that the large quantity sent, with the limited and imperfect facilities for transportation delivering the fruit in a more or less damaged condition, the returns have as a rule been unsatisfactory and have not compared favorably with prices realized in the home market, where the prices as a whole have been lower than for several years, though A No. 1 fruit has sold readily and brought fair prices. We have the report from one grower in the western part of the State, who gives his orchard special care by spraying and thinning the fruit, that he has disposed of his whole crop of thirteen hundred barrels at an average of one dollar and seventy cents per barrel.

The lesson taught the apple-grower by the past season's experience would seem to be—1st, the necessity of better care of the orchard by spraying to reduce the injury by insect pests and prevent the apple scab; 2d, thinning the fruit, thus securing a larger and more uniform size and causing the trees to produce a partial crop on the alternate or off-bearing year; 3d, allowing the trees to have the benefit of all the

ground they occupy after having attained their natural size; 4th, furnish sufficient fertilizer to keep the trees in a healthy condition.

It has become the established habit of the apple orchards in the New England States to produce by far the larger crops on the even calendar year. The bearing year may be changed by picking the blossoms from the trees on the even year, and if done when the trees first commence producing fruit may be done with comparatively little labor, and until there is a more equal production in successive years would prove profitable for the growers. This method of equalizing the production of the apple crop is not the result of recent practice. Downing, in his standard work on "Fruit and Fruit Trees of America," says: "The bearing year of an apple tree or a whole orchard may be changed by picking off the fruit when the trees first show good crops, allowing it to remain only in the alternate seasons which we wish to make the bearing year."

While the varieties of the apple that have been tested or brought to public notice may be numbered by the thousand, the number selected from the best sufficient to furnish fruit the entire year is comparatively few, and for the most profitable commercial purposes still more limited. The progress of a new apple, whatever its merits to general favor, is slow. The dealers prefer to handle the well-known varieties, and consumers know by name the apple better than any other fruit and prefer to purchase such as they have tried and have proved satisfactory.

Worcester County has produced several valuable varieties of the apple; of those having received favorable notice in the printed lists are the Hubbardston, Mother, Leicester Sweet, Magnolia, Priest's Sweet, Sutton, Washington Royal or Palmer, Fall Orange, Hill's Favorite, Lane's Sweet, Washington Sweet and Knapp's Harvey.

There have been no new varieties shown within the past few years deserving special notice, though some varieties long known are receiving more attention and coming into more general cultivation. The Mackintosh, under cultivation almost a hundred years, has not appeared in our exhibitions until recently; it is medium size, perfect form, a bright red or crimson color, excellent quality and a superior dessert apple. The Wealthy, a western apple, has recently made its appearance upon our exhibition tables from several growers; it is a handsome fruit and of excellent quality, and those having had experience with it speak favorably of its growth and productiveness. The Palmer and Sutton if more generally grown would become valuable market varieties, especially for a home market. The Fletcher Rus-

set, origin Acton, Mass., is the most attractive of any of the russet varieties. Jacob's Sweet, origin Medford, Mass., a very large, handsome Sweet, recommended by the National Pomological Society.

Very little that is new can be said, either of the varieties or the cultivation of the Pear. More efficient work for the benefit of the growers of this fruit has been in weeding out undesirable and unprofitable varieties. The public are largely indebted to Marshall P. Wilder and C. M. Hovey for their long continued effort in testing the different varieties of the pear. Col. Wilder showed at one exhibition in Boston four hundred and seventeen varieties, and Mr. Hovey at the same exhibition more than three hundred; the former being asked how many of his varieties he would recommend his friends to grow, replied "not more than ten."

To those intending to set out young trees of this fruit and desiring information as to varieties, I would recommend that they attend the exhibitions in Boston or of this Society, also consult the prize schedules of the two societies. Those schedules are believed to contain the names of all the varieties at present desirable for general cultivation; and it will be found that the prizes are graded, the higher and larger number being offered for those varieties considered the most desirable.

It may be desirable to grow a limited number of the early varieties for home use; the Summer Doyenne, Giffard, and Clapp's Favorite will supply this want. The earliest variety of any considerable market value is the Bartlett. This well-known pear is more largely used than any other, both for the table and preserving; it is seen in glass jars on the shelves and in the windows of all grocers, where it proves a tempting advertisement; it comes into bearing early and almost invariably produces an annual crop. The Seckel, Sheldon, Louise Bon of Jersey, Marie Louise and Hardy are October pears deserving a place in the amateur's collection. The Bosc, Dana's Hovey and Comice are all excellent varieties; and ripening in November, when the market is not over-supplied with table fruit, makes them the most valuable of all the varieties. The Dana's Hovey should be allowed to remain on the tree until they begin to fall of their own accord, then gathered and kept in a cool place until the middle of November, when if brought into a warmer temperature the color will change from a dull green to a yellow shade and their quality will fully merit the name which Downing gives them, the Winter Seckel. With a suitable storeroom for winter, the Anjou, Vicar, Josephine of Malines, Duchess of Bourdeaux and Winter Nelis are the most desirable varieties.

Our seasons are hardly long enough for the Winter Nelis to fully mature; though by severely thinning the fruit and allowing it to remain on the trees as long as possible without freezing, and when gathered placing it immediately in cold storage, it may be kept from withering; it is of superior quality and the only first-class pear I have ever seen brought from California, where it ripens perfectly.

There should be added to the above for market purposes the Angoulême and Clairgeau, both to be grown in a strong, rich soil on quince stocks.

Nowhere is the pear more easily grown or better fruit produced than in our own State; but being more reliable for an annual crop than the apple, requires more care in cultivation and more fertilizers to secure the best results. Most varieties of the pear set more fruit than the trees can mature and produce good specimens, and require thinning.

This is especially true of such varieties as bear in clusters, notably the Seckel and Dana's Hovey.

While the standard tree or pear on its own roots will grow and produce fair fruit wherever the apple can be successfully grown, failure frequently occurs in setting dwarf trees in soil not adapted to their growth. The roots of the quince are compact, spreading over a limited space and require a deep, rich, moist soil; and the pear on these stocks will invariably fail in a light, dry soil, yet the dwarf is indispensable to the best success in growing this fruit. Downing in his time doubted whether the dwarf trees would ever be used to any considerable extent in orchard growing, yet some of the largest growers in the town of Revere set almost entirely dwarf trees; but under their high cultivation they get the benefit of their early bearing, and in the meantime the trees are throwing out roots from the pear stock and becoming to all intents and purposes standard trees. In selecting dwarf trees choose only those that are budded close to the crown of the roots and plant the trees so that three or four inches of the pear stock will be below the surface of the soil.

The Peach is the most uncertain, as it is the most desirable for the table, of all our tree fruits, and formerly was grown with the least care. Some of us can remember when peaches were so plenty as to be of little or no commercial value. Few gardens however limited in area failed to contain one or more peach trees. There were no special varieties. The trees were seedlings and bore the natural fruit. There were two distinct classes, called Rareripe and Frost peaches: the former varied in size, color and quality; the latter were a pale green color and remained hard upon the trees until early frosts, and

were chiefly used for preserves. Between 1830 and 1840 budded trees of several varieties were introduced into this vicinity from New Jersey, where the disease known as the Peach Yellows had existed for many years; some orchards being entirely destroyed, and all more or less infected. With the introduction of these trees the disease was introduced into New England, where it has remained to the present time, exerting its baleful influence, not only upon the trees, but by producing infected pits and buds by which young stock became diseased.

The long continued reproduction of the same varieties from an enfeebled stock has aided in the decay of the strength and vigor of the peach.

The florist who cultivates the succulent plants knows he must make frequent return to the seed to keep up the strength and vigor of his plants. The Verbena and Petunia under ordinary cultivation cannot be reproduced from cuttings more than five or six years without becoming so enfeebled as to be worthless for stock. The same rule holds true of the hardier and longer lived plants and trees. Dr. Van Mons, whose experience in raising seedling fruit trees was more extensive than that of any other man, declares it as his opinion that the more frequently a tree is reproduced continuously from seed the more feeble and short lived is the seedling produced. Downing, in 1845, after describing this disease and its effect upon the trees and fruit, expresses his opinion upon this branch of the subject as follows: "Is it not evident from these premises that the constant sowing of the seeds of an enfeebled stock of peaches would naturally produce a sickly and diseased race of trees? The seedlings will at first appear healthy when the parent had been partially diseased; but the malady will sooner or later show itself, and especially when the tree is allowed to produce an overcrop."

It is almost the unanimous opinion of the more experienced growers of peaches that this disease is contagious and spreads from tree to tree. Twelve States have passed laws requiring all diseased trees to be destroyed and appointed officers to see that the law is executed. Michigan, where the growing of peaches is an important industry, was among the first to take legal action, and they claimed to have stamped out the disease throughout the State. The principal opposition to this legislation comes from those who have diseased trees in their orchards and desire to sell the fruit from them as long as they continue to bear. This seems a short sighted policy, as they thus expose their orchards to contagion and place on the market an insipid and worthless fruit.

It will be remembered that some years ago there was alarm among the farmers, fearing they would be obliged to give up the cultivation of the potato, so many rotted in the field or soon after they were gathered. A small farmer in Vermont brought to notice a new seedling variety called the Early Rose. From that have come many new varieties, mostly with slight variation from the original. The old varieties were cast aside and the disease among potatoes reduced to a minimum. Would that some one would give to us a seedling Early Rose peach that should restore to this most delicious of all our tree fruits its original strength and vigor!

The cultivation of the Plum has been, and is at present, limited in this State on account of two enemies of this fruit. The Black Knot destroys the tree and the Curculio destroys the fruit. The practice in dealing with the Knot has been to cut them out and paint the wound with shellac; but by this treatment the remedy often proves as bad as the disease, as the constant cutting destroys the form and eventually the life of the tree. When the Knots first make their appearance they may be seen by the discoloration and swelling of the bark on the limbs of the trees. Recent experiments have shown that if they are painted over with kerosene mixed with some pigment (ordinary whiting answers the purpose) to the consistency of thick paint, to prevent it from running down the limbs, it kills the wart and does not disfigure or apparently injure the tree; it is also claimed that spraying the trees with the copper solutions recommended for fungus growths will prevent their appearance. The usual method of combatting the Curculio has been where there were but few trees to spread a sheet upon the ground under the tree, and with a sharp rap upon the limbs of the trees with a padded mallet, the insects would fall upon the sheet when they could easily be gathered and destroyed; but if any considerable number of trees are grown, the most economical and efficient method is to enclose the space allotted to the trees and keep fowls in the enclosure, and by an occasional jarring of the trees the fowls will do the rest.

The Plum makes a quick growth and comes early into bearing. It adapts itself readily to different locations, though it succeeds best in a heavy clay soil. Among the varieties of plums the Green Gage has always held the same relation that the Seckel holds among pears. The Washington, Jefferson and McLaughlin approach it closely, and many think the latter fully its equal in quality. The Bradshaw and Lombard are more largely grown for market than any others, and where the two enemies are kept at bay, prove a very profitable fruit.

There have been introduced within the past few years several Japanese varieties of the plum. It is yet too early to estimate the value of this addition to our old varieties. Some of the fruit has been shown at our exhibitions of excellent quality. Whether the trees will prove as hardy as our old varieties has not been shown.

I would suggest a word of caution to those who propose to purchase this class of trees. Two or three nurseries in New Jersey have been largely interested in disseminating these trees, not only supplying growers, but furnishing other nurserymen, and the trees have been found to be badly infested with the San Jose scale. Some parties having ascertained the condition of the trees after having set them in the ground have dug them up and burned them to prevent the scale from spreading to other fruit trees.

The prices at which Grapes have sold the past few years have not been encouraging to the extension of their cultivation as a market product. The large quantities sent into our markets from the Middle and Western States create so close competition that there is little profit for the grower. A disadvantage under which our growers labor is the liability of the loss of the crop by either a spring or early fall frost. Some of the largest growers have adopted the practice of girdling their vines, by which they secure their crop about two weeks earlier, and the berries and the bunches are larger and more attractive in appearance.

It was formerly thought that girdling the vines affected unfavorably the quality of the fruit. Analyses by Prof. Goessmann at different times in the season showed that fruit from the same trellis of girdled and ungirdled vines the former contained more sugar and less water than the latter. The practice of girdling is worthy the attention of the amateur growers, as by spraying to prevent mildew, and girdling to hasten maturity, some of the crosses with foreign varieties of better quality might be successfully grown. Vines bearing close-growing bunches like the Delaware and Moore's Early cannot be successfully girdled, as the increase in the size of the berries in such compact form causes them to burst and decay. The Worden and Concord are much improved in appearance. The Grape delights in a warm dry soil, and the chances of failure may be reduced by the selection of an elevated situation declining toward the south or southeast.

The methods adopted by the Strawberry growers are so uniform there is little can be said upon that subject. It is almost the universal practice among market growers to set the plants in the spring

in rows from three to five feet apart and from eighteen inches to two feet apart in the rows, depending upon the habit and free growth of the variety, and allowing the plants to cover the ground except narrow paths between the beds. For the garden or exhibition, planting in single rows or in hills may prove more satisfactory.

It requires two years to grow a strawberry crop, therefore the ground should be thoroughly prepared and enriched sufficient to mature the fruit the second year. If this is done and the ground kept clear of weeds the first season it will require no care the second year. It is impossible to recommend varieties that will prove equally satisfactory under different conditions. There is no fruit that varies so much in different, though nearby locations.

The leading varieties as seen in the Boston market are Belmont, Bubach, Haviland, Leader, and Marshall. The Marshall has no peer as an exhibition berry. Last year was the first that it had been fruited as a field crop, and there was some complaint that it did not prove sufficiently productive to make it desirable for that purpose; but its size, quality, and beauty, must make it a favorite for the garden and exhibition.

In the strawberry we have an illustration of deterioration from continued reproduction by offsets or runners. None of the popular varieties of twenty-five years ago are in cultivation at the present time; not that the new comers are superior in any marked degree, but the old varieties were worn out and failed to produce crops. The Triomph de Gand, Jucunda, Laconstante, and even Hovey's Seedling, which antedates them all, would lose little in comparison with the popular varieties of to-day, either in beauty or quality.

The present standard of our fruits can only be sustained by continued renewal. The fruit growers have not kept pace with the florists in improvement made upon scientific principles, as note the improvement in the Carnation Rose and Chrysanthemum made within the past few years; and this advance has been made by hybridization, by working for a definite purpose, by crossing parents, each of which had some distinct points of excellence in size, form, color, or vigor in growth. The stock raiser breeds for a definite purpose, crossing parents that possess a combination of the qualities he seeks to secure. To the fruit grower this field of investigation and experiment should prove a fascinating one, though requiring study, care, and perseverance. It is receiving more attention among horticulturists than formerly.

In the horticultural department at the Agricultural College at

Amherst there is an effort being made to grow all the known named varieties of the small fruits under as nearly as possible like conditions. They had under cultivation the past year one hundred sixty-four named varieties of grapes and four hundred seedlings—seventeen varieties of currants—twenty-one varieties of blackberries—twenty-four varieties of raspberries—twenty-six varieties of blackcaps—twenty-three varieties of gooseberries—two hundred and six varieties of strawberries and four hundred seedlings. This affords students and visitors an excellent opportunity for comparison of the different varieties in the habit of growth and quality of fruit.

While fruit supplies one of the most enjoyable luxuries of the table and one of the most substantial articles of food; while we have a soil and climate unequalled for the production of some of the best known and extensively used fruits that the earth produces; with a home market constantly increasing and a foreign market yet in its infancy and confined to a limited number of foreign ports, but capable of much wider expansion,—the fruit growers have encouragement to persevere in their calling, with reasonable assurance that their returns shall compare favorably with those engaged in any of the agricultural pursuits.

18th February, A. D. 1897.

ESSAY

BY

J. LEWIS ELLSWORTH, Worcester.

Theme:—The Family Vegetable Garden.

The vegetable garden is of great importance on every farm, large or small. Considering the wholesomeness of vegetables, the importance of the garden cannot be overestimated. The direct benefit to the owner cannot be computed from a money point of view.

The gardener should first have a definite plan of the crops he intends to raise, and the size and character of his garden. The trouble with many who start a garden is that they do not begin to think what they want until after the ground is ploughed. Then they have to make up their minds quickly, rush to the seed store and buy the first thing that comes handy. The two most important factors of a successful garden are the cultivation of the soil and the seed.

Thorough ploughing and a fine seed-bed are needed. The land should be ploughed twice, first deeply; then it should be thoroughly manured, and then ploughed again, not so deeply as before, as it is not good to cover the manure too much. Then the garden should be given a light harrowing and should be smoothed off with a drag to break the lumps and make a fine seed-bed.

Great attention should be given to the after-cultivation. I begin cultivation even before seeds start, and in that way destroy the early weed seed even before it sprouts. Go through the beds with a wheel hoe, and as soon as the seeds show, continue the use of the hoe and harrow all summer until the maturity of the crop.

To make a success of gardening good seeds are necessary. Without them, all the labor, the use of the land and the implements are in vain. Seeds should be fully ripe when planted, and the large, full seed contains more nourishment for the young plant than does the

seed that is not so ripe. The seed must give the first nourishment to the plant. The seed business has entirely changed in the last quarter of a century, and has now become a business of great magnitude. There are now employed in the business, improved system, better knowledge and facilities. Formerly, farmers raised their own seeds, perhaps finding it necessary on account of the difficulty in buying good seeds. But now, with the testing system, we have no difficulty in getting good seeds. There are thoroughly reliable seed farmers in all parts of the United States, Canada and Europe. Canada produces most of the pea seed; California, lettuce; Ohio, tomato; and Connecticut, sweet corn and onion.

The same principles apply to a garden whether large or small. It is well to start out in the spring with radishes. I advise planting the following crops: Vick's Scarlet Globe radish; Tennis Ball lettuce; Round Leaved spinach; Alaska, for early peas, to be followed by the Advancer, Telephone and Stratagem; for beets, Crosby's Egyptian for early, and Edmunds' for late; beans, Wax for string, Dwarf Horticulture for early shell and Worcester Pole for late shell; sweet corn, Corey for early, Stowell's Evergreen for late; cucumbers, White Spine; tomatoes, Atlantic Prize for earliest, Dwarf Champion and Acme for later; squash, in order, Summer Crookneck, Boston Marrow, Bay State, Essex Hybrid, Hubbard; cabbages, Jersey Wakefield and Warren's Stone Mason.

27th February, A. D. 1897.

ESSAY

BY

HENRY K. BAILEY, North Scituate.

Theme:—Plant Beauty.

Plant beauty is of two sorts, beauty of color and beauty of form. In some plants, like the calla, beauty of form predominates; in others, like the peony, beauty of color; in still others, like the gladiolus, the lines of stalk, flower and bud are as noticeably lovely as their colors. Plants conspicuously beautiful for their form should not be gathered together in tight bouquets; each should be enjoyed by itself, or with two or three companions so grouped in a vase or other receptacle that the beautiful lines of each are enhanced by those of the others. Plants of lovely color, on the other hand, are more effective when massed. One snowball is insignificant; a bushel basket full of branches crowded with the balls of creamy white, glowing against the rich green of their foliage, is highly effective. In the arrangement of flowers of beautiful form, we have much to learn from the Japanese.

The *Studio* for October and December, 1896, has suggestive articles, with more suggestive illustrations, of the fine art of flower arrangement as practised by the floral artists of the Sunrise Kingdom. Mr. Conder's book on the subject, to be found in the library of the Horticultural Society, will repay thoughtful study. Even the Japanese prints, now so easily obtainable, are not to be despised by the wide-awake florist.

Form beauty is dependent largely upon contrast, proportion and curvature [this was illustrated by numerous charts and blackboard sketches]; and the grouping of plants or sprays is to be governed by the laws of balance. [Illustrated.] Beautiful color has such qualities

as purity, gradation, depth; and when colored flowers are massed, harmonious relations of the different hues should be secured.

There are five typical color-groups or harmonies. The first may be called a contrasted harmony. All green leaved plants with white flowers are in this group. The second is dominant harmony, produced by combining tints and shades of one color; as, for example, a head of hyacinths or a bunch of double violet asters with no green foliage in sight. This combination of tints and shades, so common in the decorative arts and in dress goods, is rarely found in nature, and is least satisfactory as a harmony. The third is analogous harmony, composed of related hues of color. All green leaved plants with yellow flowers are in this group. A bunch of gladioli tinted with violet-red, crimson, rose, scarlet and salmon forms an analogous harmony of exquisite beauty. The fourth is complementary harmony—a harmony brought about by the juxtaposition of complementary colors. A violet-red camellia seen against its glossy green leaves is a complementary harmony; so also is a bunch of violets, with their rich yellow-green leaves. The fifth is perfected harmony: a color group composed of analogous hues combined with a color complementary to the general effect of all the group. For example, the gladioli forming an analogous harmony, if placed against a background of old ampelopsis leaves of rich bluish-green color, would be greatly enhanced in color effect, and the whole would form a perfected harmony. A bowl full of pansies is in perfected harmony. The analogous group runs through varying hues, from pure yellow in the flower centres to the yellowish-green of the foliage. The complementary to the effect of this group is to be seen in the rich purple of the petals. [Charts, diagrams and bouquets of flowers were used to make this clear. The complementary and analogous colors were illustrated by means of the Bradley color-wheel.]

The American people are becoming more sensitive to beauty every year. The florists who furnish flowers to decorate their homes and halls can do much to elevate public taste. A really beautiful thing is always attractive. What was true for Emerson is true for us all. Speaking of beauty, he said:

"When first my eyes saw thee
I found me thy thrall."

It costs no more to make a beautiful bouquet than to make an ugly one, and ultimately he who produces beauty gives the greater pleasure and receives the larger reward.

4th March, A. D. 1897.

ESSAY

BY

MARY E. CUTLER, Holliston.

Theme:—Gardening for Women.

Ten years ago such a subject would have been presumptuous. One field only was believed to be opened to woman. If she could not find sufficient occupation for herself in the house she was deemed either a poor housewife, or, if her housekeeping was beyond reproach, unduly ambitious. Many women acted as school teachers. But this was scarcely an exception to the rule, as the teacher simply intensifies and extends the activity of the mother. Under pressure of hard necessity women and girls worked in shops and factories, but they were regarded as unfortunates by the greater part of the community. On the one hand, their employers did not feel compelled to give them wages equal to those earned by men. On the other, many of their early companions considered themselves justified in cutting the acquaintance. A woman farmer! Preposterous! The only idea conveyed by the words was that of the German peasant woman, clad in gaudy clothing, wearing heavy wooden shoes, and submissively following her lord and master through the ploughed field—in extreme cases assisting the donkey to drag the plough.

What at the end of ten years? The most potent fact is that woman has entered almost every field of industry. If you demand the reason I must answer that there are several. Chiefly the fact, that in America, there is always a tendency to utilize waste energy. Among secondary causes may be enumerated these: The ever felt need of delicacy and tact in religious and medical work has produced the deaconess in the one department, and the woman nurse and physician in the other. The need of manual training teachers has drawn women to study wood and metal working with pedagogic ends in

view. But the knowledge of a trade is in itself a temptation to practice it. Accordingly we find woman carpenters, smiths, etc. In the large cities the Woman's Exchanges have made it possible for women to dispose of art products to profitable advantage. The most prolific cause of all, however, is the introduction of stenography. The stenographer inevitably tends to become the private secretary, and, in many cases, the confidential adviser. For men it early proved a stepping-stone to all forms of business advancement. Why should not the same be true in regard to women? No satisfactory negative reason can be found, and so women have entered all departments of industry. Ten years ago my task would have been a revolutionary one. Today the revolution has been accomplished. Instead of pleading for a new principle I am simply to indicate how one more application can be made of a principle already established. I am here today to extend to Horticulture and Floriculture the methods already employed in many other fields of industry. I have classified this subject, and first is, Possibilities for all Women.

What many have done and all can do. It is not my aim nor purpose to discourage or cause any of the thousands of women in this country who are engaged in other vocations to be dissatisfied with their lot, but it is to show those who are endeavoring to solve the question of self-support, that the occupation of gardening is a profitable one, provided it be carried on with steady, personal application, without which there is success in nothing. I wish also to show that there are possibilities and success beyond a life spent in government buildings, behind the store counters in our vast cities, in schoolhouses, in factories and workshops. The farm and garden feeds you all. No wonder you sigh for the green fields, the fresh fruits, vegetables and flowers, horses and carriages to ride over the country with, a home of contentment and rest. Look at the vast army of women that find employment in our cities, who toil from morn to night, tired and dragged from day in to day out; they will tell you they like it, there is excitement in it, better pay, more privileges, etc. On the other hand it costs more to live in cities, air is often poor, if more is earned less is saved, and what have you to show for your earnings when you are along in years and care to work no more.

On the other side, the woman gardener, with a small beginning, has been making a pleasant and valuable home, it has gained in value year by year, her money gained is invested in something that she owns and will for a lifetime. One essential to success in gardening is a love for it; but given this, and intelligence to first plan carefully

and afterward carry out plans with perseverance, and gardening will be found a successful, pleasant and congenial occupation for women. Women are beginning to think about these things. Many of them could do much better at agriculture than to work for the very low wages paid for woman's work in the cities. Don't think I would have you do any field work. It is not so much labor and muscle nowadays as brains and machinery. Don't do your work first and thinking afterwards, but think and plan first and then work. Here is an illustration of what has been done: Miss Sarah Hewitt, daughter of Abram S. Hewitt, ex-mayor of New York City, is an expert in many of the practical details of caring for a horse, such as shoeing, of which most women know scarcely anything. Her trim figure, as she sits on her horse with ease and full control of the animal, is familiar to every one in the neighborhood of her father's great farm at Ringwood, N. J. It is not only in riding that Miss Hewitt proves herself to be an advanced woman in the best sense, that of being able to make herself really useful. She superintends all the workmen, about 25, on her father's estate. The farm covers 2,000 acres and is all in a high state of cultivation, save that reserved for park-like grounds. Miss Hewitt believes in farming in a business-like way, and she knows exactly what she has a right to expect from each employé on the place. She is a strict disciplinarian, but there is not a man who would not go through fire and water for her. She understands horses from their noses to their heels. It is no figure of speech that she knows their heels, for she can shoe a horse as well as any farrier in the State. It is a sight that has been enjoyed by her friends more than once, that of this dainty young woman hammering a refractory shoe into shape on an anvil and afterward measuring it to the foot of her favorite mare. She is too fond of horses to place a hot shoe against a hoof and she insists that the shoe shall always be cooled thoroughly before it is applied. She is quick in her movements, and there are blacksmiths in the neighborhood who freely admit that she can shoe a horse in less time than they can do it well. She does that as she does everything, on scientific principles. It is a well known fact that horses have as many different traits of temper and disposition as human beings. Miss Hewitt seems to understand a horse intuitively, and it is said that she never failed to conquer any horse that she ever took in hand, and that, too, without any means save those of kindness.

The question is often asked me: What can woman do (or what can I do) to gain a living by flowers, fruits or vegetables? Did you ever

visit the Agricultural Department at Washington in the spring of the year and look upon the several hundred women employed by the Government putting up and labelling the seeds that are distributed by the Congressmen? Note the advance in women's employment. Prior to the war no women were employed in any of these departments, nothing but male clerks. United States Treasurer Spinner, who signed the greenbacks first issued, was the first government officer to ever hire women in any of the departments. Now many thousands are employed in every department, and they make (of course) most efficient clerks.

"What many have done, and all can do." In many of the towns in this State, and I presume other States, in the summer months during the flower season, a flower committee is formed, meeting every Friday afternoon (generally at the depots), there they receive flowers donated by loyal women. They are packed, forwarded free by the railroad companies, and distributed among the sick in various hospitals of Boston and other cities. They are placed on small tables by their bedsides and, better yet, the patients love to hold them in their hands and doubtless do so as long as their fragrance lasts. Many say, my lot in life is an humble one, I can do but little. Two ladies visited the Cathedral of Cologne, they were admiring its beautiful architecture when they overheard two men in the humble garb of workmen say one to the other, "Didn't we do a splendid piece of work?" One of the ladies said, "Pray what did you do?" "What did I do?" said the workman, "I mixed mortar for two years over across the street." Now if your lot is an humble one, if you cannot do anything else, mix mortar, carry or send flowers to the sick and helpless. Stand in your lot and by and by you will hear the great Captain say, "Well done."

An industry which is on the increase for the employment of women is classified as small fruits. Home consumption has increased to such an extent that many acres are raised to satisfy the demand, and in the season many women are employed in picking strawberries, currants, raspberries and blackberries, they also are competent to pack and ship, and in many cases supply the local trade. In the fall of the year the canning factories give employment to many women. There are many near my home and it is interesting to watch the process of preserving the various kinds of fruits and vegetables; first comes asparagus, string beans, Bartlett pears, sweet corn, tomatoes, squash, apples, etc. This gives work to the old and young. The packing of fruit is another source of income to women. At the South

the oranges and lemons are papered and wrapped by women; they are wanted in the grape regions, particularly in New York State and California, to pick in the vineyards and pack the fruit in boxes which are sent nearly all over the world. Who can do this so well or better than women? The march of improvement is onward and every day brings something new.

Second. Possibilities for many women. What some have done and many can do. One must have a love for gardening to make it a success, it must be born in them. In my neighborhood I know of a woman who gets a good living for herself and family by the cultivation of gladiolus, she has a large garden of the choicest varieties and colors, sending them to Boston for sale in their season. She also sells the bulbs. Miss Black of Harrisburg, Penn., a young lady of taste and refinement, and an amateur florist, had the finest display of gladiolus last year ever seen (it is said), numbering some 140 varieties. Another woman in a near by town who has two large greenhouses full of English violets, picks every other day for the Boston market. This glass farming is getting to be quite fashionable, and it is something women can engage in easily. As an instance of what women have successfully accomplished in horticulture in another part of the country, is Somerset Park, a woman's health and pleasure resort in the Rocky Mountains, of which many of you doubtless know. This most beautiful of the Rocky Mountain Parks, lying between Denver and Colorado Springs, and named after that noble English woman, Lady Henry Somerset, is owned and managed by women; and the president of the resort and association, Mrs. Olive Wright, is by her shrewd management fast making it a famous resort for health and pleasure seekers. The climate is delightful, wild flowers are in great profusion and have become famous the world over for their beauty and variety. Near by are cultivated peach orchards, vineyards, strawberry fields and all kinds of small fruits, which find a ready market in Denver. All these are managed by women. I wish I could half express my earnestness in trying to persuade the thousands of women in these United States, a country rich in nature, soil adapted to everything in its different locations, free country, fresh air, which insures good health and long life, to more engage in this noble work of tilling the soil, thereby causing two blades of grass to grow where only one grew before.

Last August I spent a few days in Newport, R. I. I never saw flowers in such profusion there as the past year, the grounds were full of plants and shrubs in full bloom. I naturally looked in the

flower stores and found in one a woman sole proprietor and manager; said she had more than her share of the trade; she owned her greenhouses just outside the city limits. A large seed store in Springfield, Ohio, is owned and managed by a Mrs. Haynes, who is doing a successful business. Many women the past few years have engaged in glass farming; greenhouses and hot-beds have many attractions. The improved ways of heating, ventilating and watering have reduced labor as well as lightened it.

The paying crops, just now, I think to raise are carnations, lettuce and cucumbers. I love to see things grow and help them grow. I love to work and never believed that work was a curse to any person. The great curse is laziness and shiftlessness. There is no better place to see the work of women gardening than at our Agricultural Fairs and Grange Harvest Festivals. It is often the case that the women take more interest than the men, and largely the exhibits are productions of the women. This was shown at the Middlesex South Agricultural Fair last fall, when the Patrons of Framingham and Sherborn Granges competed for the prizes, each table extending across the hall. The women arranged the exhibits and I know they had a hand in producing them; fruit and vegetables as well as fancy work. It was a good idea conceived by the Massachusetts Horticultural Society of Boston in offering prizes to the scholars for school gardens, school herbariums and children's herbariums. The cultivation and observation of plants in school grounds and instruction upon them being of high educational value. Native wild plants, such as ferns, grasses, asters, golden-rods, violets, native shrubs; and economic plants, such as grains, vegetable roots and leguminous plants; must be the stock of the gardens. Why is it that so many women of taste, who love to adorn their persons with flowers and to decorate their rooms with floral designs or collections of flowering plants, have so little desire to enhance by the same means the beauty of the external view which those rooms command and to add similar attractions to the outside of their dwellings! It must be from the prevalent, yet mistaken idea, that gardening is too hard work for them. For those who can claim brothers, husbands or fathers, who possessing the taste and having the leisure for horticulture exemplify it, or those who can afford to pay for the making and care of a garden, are always quick to perceive its advantages and to enjoy them to the utmost. But there are many household occupations which women are expected to perform, and which they do perform without injury or complaint, that are much more wearisome and more difficult to

accomplish than gardening. Gardening is earnest work, it will not do to poke here and push there, and putter around anyhow and anywhere, there must be thorough and well directed effort.

The legend of the Cherokee Rose is as pretty as the flower itself. An Indian chief of the Seminole tribe, taken prisoner of war by his enemies, the Cherokees, and doomed to torture, fell so seriously ill that it became necessary to wait for his restoration to health before committing him to the fire; and as he lay prostrated by disease in the cabin of the Cherokee warrior, the daughter of the latter, a young dark-faced maid, was his nurse. She fell in love with the young chieftain and, wishing him to save his life, urged him to escape; but he would not do so unless she would flee with him. She consented. Yet before she had gone far, impelled by soft regret at leaving her home, she asked leave of her lover to return for the purpose of bearing away some memento of it. So, retracing her footsteps, she broke a sprig of the white rose which was climbing up the poles of her father's tent, and preserving it during her flight through the wilderness, planted it by the door of her new home among the Seminoles. And from that day this beautiful flower has always been known, between the capes of Florida, and throughout the Southern States, by the name of the Cherokee Rose.

It is of rapid growth, and soon forms a hedge as dense as it is beautiful. It runs along the roadsides, likewise, converting roads and fences into thick banks of leaves and flowers. It climbs to the tops of high trees, hanging its festoons among the branches, or letting them droop gracefully to the ground. In fact, this showy wild-flower, with its five white petals and centre of gold, imbedded as it is in so many brightly shining leaves of green, gives almost a bridal aspect to the spring landscape, and well-nigh makes all the citizens' cottages look like homes of the poets. Napoleon, when at St. Helena, formed himself a garden; it was square, and of about an acre in extent. "Here," writes one who saw him in this inclosure, "in a flowered dressing-gown, green slippers, and his head bound round with a crimson silk-handkerchief, may be found the once mighty emperor, wielding a watering-pot, and working in the soil." It was a very kitchen garden, in the most homely sense of the word; and the genius that produced such transcendent effects upon the plains of Austerlitz and Marengo, seems to have served him but little in his encounters with earth and stone.

Better would it be if every cottage in the land had its garden plot, and its "square" of good vegetables and good fruit. It is the same

with good gardening as with a good sermon, it will bring out a thousand good things from the same old text.

Third. Possibilities for certain women. What a few have done, and more could do. If I had not been entirely successful for the past twelve years, in both the floral and vegetable departments of horticulture, I could not have accepted this invitation to speak on this broad subject, which has been occupying the minds of many thoughtful men and women, all over the land, during the past few years. This is somewhat due to the recent depression of business in mercantile and professional life, which has caused much uneasiness and dissatisfaction, and turned many minds toward the subject of tilling the soil.

You may wonder why I, a woman, should be engaged in this occupation. For my own part I was forced into the business by circumstances; but I have never regretted for a moment having entered it.

A time came twelve years ago when it was a matter of selling my pleasant home, or leaving the school I was teaching and taking care of it myself. I could not bear the idea of seeing the place go into other hands; and so in spite of discouragement of friends, I determined to try and manage it.

My farm of sixty-eight acres is located in Holliston, Mass., on the Boston & Albany Railroad, half way between Boston and Worcester, well situated for market gardening.

The land slopes gently to the southeast and northwest, so that I can get two crops of early vegetables on the southeast slope, and peach orchards, and later crops on the northwest. On first assuming direction, I decided to go carefully the first year. The spring proved late, the summer dry, a full crop of peaches, and a late fall, all of which was in my favor, considering my soil and location. We soon found that we did not raise vegetables enough to half supply our demand, and the following year we raised more than ever, and have steadily increased the size of the various crops ever since. At this time my carnation house is receiving my attention, the forcing house is well under way, and will supply some eight thousand feet of hotbed sash with tomatoes, cabbage, lettuce, peppers, radishes and pansies. I am much in favor of the cultivation of peaches. I believe there is money in them. Large peach orchards can be seen on the northwest slope of my farm, and among the younger trees small fruits can be seen growing. I believe the first crop pays one for the outlay, cost of trees, and labor in setting, and the second crop and all after is clear gain. The kinds I have been most successful in growing

(and I have tried nearly all), are the Mt. Rose, Stump the World, early and late Crawford, Oldmixon and Crosby. Many kinds have been "called" but "few chosen," for this soil and climate. The peach is one of our finest fruits, when well cared for; but of late it is uncertain, and does not seem so hardy. It is a native of Asia and China, where the climate is much less severe than ours. The favorite soil is a light sandy loam. To insure a peach crop in New England every year, some method must be devised to protect the fruit-buds from winter-killing. Generally they are destroyed if the temperature falls lower than 15 degrees below zero and remains a considerable time at that point. In the fall of 1885 many of the buds were destroyed when the temperature had not fallen below 18 degrees above zero. In 1886 many buds were destroyed before Dec. 1. A disease known as the Yellows is a serious hindrance to peach culture. I believe there is no permanent cure for it, at least the cure is not worth the pay; the best doctor is the axe. I believe it is contagious, spreading to other trees. The first indication of the Yellows we notice is, that the fruit is small, and ripens prematurely, and instead of the color being shaded very evenly, we find it in spots, too high colored. The leaves turn yellow very early in the season. Another pest is the borer. Hale Brothers' famous remedy for the peach borer is thus prepared: In 100 gallons of water dissolve 25 pounds of common potash, add 1 gallon of crude carbolic acid, and lime enough to mix to the consistency of thick whitewash. To be applied in April and May. I know that the peach culture is not all smooth sailing; but the reason why I am interested in the subject, is because I raise the fruit, and sell it at a profit. You will excuse me if under this head, "Possibilities for Certain Women, What a few have done and more could do," I am somewhat personal.

We hear and read a great deal about over-production, and under-consumption. There is no such thing today as over-production in Massachusetts. A first-class No. 1 article always sells. I thought a few years ago when I first launched out in the market gardening business, that there might be such a thing; but I doubled my business, and did all the better. There was a time when we thought we could not raise lettuce for less than a dollar per dozen; now I should be very glad to get fifty cents. There was a time when we could not grow it (or thought we could not) in hot-houses, but were obliged to grow it in hot-beds outside.

This has all been done away with.

One swallow does not make a summer, nor one collapse in apple or

grape prices render profitless our orchards and vineyards. I do not think the extreme low price of either Apples or Grapes can be wholly chargeable either to over-production or poor quality. The truth is, we shall have low prices till we have more money.

Study your business, understand the land that you cultivate, get all the information you can in relation to the business that you are carrying on, and make a specialty of some few articles, because any one of the articles that you might produce will give you a living.

I am carrying on at this present time five distinct branches, and any one of them will give me a good living at any time. We of today have a better chance than they did ten or twenty years ago, even in farming. We have opportunities today for acquiring knowledge at the Agricultural Colleges and Experimental Stations; we have the land which is at our disposal; we have the markets, which you all know are the best in the world. There is no such market in this country, or in any other country, as the Boston market; and there are no such vegetables or produce of any kind in such good shape as shown in the Boston markets. When I am in a large city I make it a practice, some pleasant mornings, to go down to the markets and learn what I can about the handling and sale of farm produce.

I was in New York in the midst of the Asparagus season. There was a great quantity of it coming into market; most of it came in boxes of white pine, but they were old, they had come and gone, back and forth, time and time again. It was very nice, fine Asparagus, tied up in the usual way, but it sold at that time for six cents a pound. There was another lot came in on the same boat, in white, clean boxes made of very thin wood, cheaper boxes than the others, and the Asparagus was of the same quality, to all appearances, but it was tied up with nice, pink tape, which does not cost five cents a mile. It looked very attractive, and it sold for ten cents a pound.

I have seen Kalamazoo Celery sold in the market (and they grow very nice Celery out there), tied up with blue tape, a third of an inch wide, tied at the bottom and also about half-way up to the top. This blue tape on the white Celery made the bunches look very attractive, and everybody wanted it. It sold for a good deal less money than my friend Mr. W. W. Rawson gets for his Celery, but when Kalamazoo Celery was selling for 18, 20 and 25 cents per dozen, done up in the ordinary style, this gentleman's Celery, tied with blue tape, was bringing 35 cents a dozen, an increase of 40 per cent. I think it is a good plan occasionally to visit the markets, study prices, compare varieties, and learn how to better your crops and

pack for market; you are really working as hard as if you were in the field.

Not long since, an electric car on the West End road in Boston came to a sudden stop. The motorman looked at the conductor, and the conductor looked back at the motorman; they looked up at the trolley wire and found that all right; they took up the trap and found the fuse right; very soon an operator came along and found the trouble. "Why, Billy," said he, "there is a *dead rail*, and all the dynamos on the West End road would not start this car, nor any car we own." Now we have all got to get over that dead rail, wake up, do something, and do it well.

There is a great deal said and written about Abandoned Farms; the farms are not to blame, it is the people who run them. I have travelled through the Eastern and Middle States thoroughly, and have yet to find the land that would not produce something. I believe that all land can and should be made productive, and have no faith in the necessity of Abandoned Farms, when there is a willingness to work. Where my gardens are today once was rocky land covered with huckleberry bushes. Now a mowing machine can run over any part of it, and bicycles through the driveways; and the result has been accomplished by nothing more than energy and perseverance. It is perseverance that has rewarded every woman in this Commonwealth with what measure of success she has attained. It was perseverance that carried the hero of Appomattox to victory. It is perseverance that carries ten per cent. of those who are successful in business life in triumph over the ninety per cent. who go down. Many and many a person has failed on the very threshold of success for the lack of it.

I am not here today to speak for organization; but I should be false to every consideration, false to my obligations, if I failed to call attention to the grand work which the Patrons of Husbandry are doing in this State and every one of the United States, and to the assistance it has been to farmers in helping solve this great problem. Wherever the grange has established its home and lifted its halls, as it has all over the State, it has not only offered the opportunity, but, by the faithful labors of the Patrons, it is securing substantial results. You have your Horticultural Societies, your Market Gardeners' Association, Farmers' Clubs and other organizations; but I tell you, farmers of Worcester, that to-day more can be gained in the search for success in Horticulture or Agriculture through the door of the earnest, working Grange, backed as it is by the boards of Agriculture, than by any other organization in existence.

What wonderful progress has been made in these latter years in Agriculture, in Horticulture, in Floriculture, in Literature, in Science, in Art, especially in Medical Science (which goes to prolong human life)! What comforts and luxuries are enjoyed today by the humblest people, that were unknown to the wealthy a few decades ago! Upon a recent visit to Washington, in going from my hotel to the capitol, I passed by the statue of Benjamin Franklin, on Pennsylvania Avenue. I looked up in the face of what seemed to be a kindly, benevolent old man, and said to myself: Could the stone heart beat, could the marble lips move, could the tongue speak, what would he say to his countrymen now? What would he say to this capital city of the nation? What would he say to the electric light, the telephone? What would he say to the electric cars, the phonograph, the Atlantic cable, the flying colonial express which runs from Washington to Boston in twelve hours? (It took two weeks for the news of the Declaration of Independence to reach Boston from Philadelphia by the swiftest transportation then known.) What would he say to the army of employés in the United States Post-Office Department? (He was George Washington's Postmaster-General and a member of his Cabinet, and he kept all the accounts of the Department himself, and did not have a clerk.) What would he say if he could see plants growing by electricity in the night? What would he say to the improvement in printing, which was his profession; to the sun pictures or photographs, now printed by the million in the cheapest papers? Think of the cheapness of literature, of the public libraries, and the educational facilities that are within reach of the poorest and humblest of our people. But these privileges bring with them added responsibilities for the way in which we use these blessings.

If I can get a good living, and something more, in sterile New England, and the soil of my farm is no better than that of thousands of others in Massachusetts, is it not an inducement and encouragement for those who live in the more fertile soil from the Potomac to the Rio Grande and from the Golden Gate to the Hudson, to engage in this same honorable occupation.

On the morning of a memorable battle Napoleon Bonaparte pointed his gleaming sword toward the morning sun, and said to the officers that stood about him, "Behold! Behold! the sun of victory!" May the same sun of victory shine on all connected with the Worcester County Horticultural Society, and upon all engaged in Horticulture and Agriculture, and may they be characterized far and wide for their harmony, contentment and prosperity!

11th March, A. D. 1897.

The following essay was read before the Society in connection with the Massachusetts Fruit Growers Association, at their Annual Meeting:

ESSAY

BY

A. G. SHARP, Richmond, Mass.

Theme:—Small Fruit Culture.

I was a little surprised to be called here by your President to give you a talk, or read a paper, on small fruit culture, as I doubt not there are men here, who have had more experience than I in this line, though not probably under the same conditions of soil, etc. I can always learn something from any man who has been a cultivator of any small fruit. My soil is a heavy clay loam that heaves badly with the frost, fall and spring, so much so that I have seen clover roots of more than a foot in length thrown entirely out of the ground. Therefore I have to pursue a different system from one on a sandy soil. I am not going to give you any theories, but what I have learned or observed in actual practice during my seventeen years' work among the berries. If we were all growing fruits under the same condition of soil and markets, less would be gained in attending these meetings. It is of our varied experience that it becomes so profitable to meet and compare notes, in fact this is now a necessity; and the question is not can we afford to attend them, but can we afford to miss them? The days of guess-work have gone by for the successful farmer or fruit grower. The best dairymen have their scientific tests, by which they weed out their unprofitable cows, study the food analyses and learn which are the most economical and most profitable feeds to use for both milk and butter, also mamivial value of different grains used, hold their winter meetings and discuss their problems, striving to get nearer the consumer or lessen the expense along the line and at the other end, knowing that one cent. per

quart saved sometimes means the difference between a profit and a loss in the business. Prices of the small fruits have been on the decline for years, many thousand quarts have been sold the past year for less than the cost of picking and marketing; and there is no certain prospect of a return to much higher prices in the near future. Fruits may not have fallen more than other farm produce, but nine-tenths of the drop in prices falls on the grower; for labor, picking, express or freight rates, etc., have not fallen in proportion, and the commission merchant still lives under the old dispensation, taking his one-tenth per cent. as rightful share. Therefore it behooves us to make a desperate effort to reduce cost of production and marketing. Anyone who now begins the culture of small fruits without a careful study of these problems will be pretty sure to graduate in the primary department, and two or three courses will convince him that something beside muscle and fertilizer is required for success. I cannot tell you just how to clear $1,000 per acre on strawberries, or any other big stories; it is not necessary, for there are plenty now in print. When I began I saw several that I remembered, for small stories or failures reach the printers. But I do not condemn all the catalogues, as some contain a good deal of good instruction; if they do strongly recommend potash, it is not all lye they contain. Fruit growers are the most unselfish men you can find as a rule, the most willing to give instruction and the least afraid of honest competition. Perhaps the best I can do is to state how I raised my last crop of strawberries. Three years ago I purchased three acres of land; having been ten years in grass it was well run out, except spots that had well run into quack grass; it had received the manure from one cow, applied in little garden spots each year till quack grass got so thick another piece was used, etc. I bought ten cords of manure delivered on the lot (for $40.00); this was evenly spread over three acres and the piece planted to corn, potatoes and roots, mostly potatoes, where strawberries were to be, using potato fertilizer in the drills. One-fourth acre was so matted with quack roots that I did not plant it, but cultivated once a week till August first and sowed to flat turnips. I dug three hundred bushels of potatoes from one-fourth acre; the crop no doubt doubled by the quack grass, as I had to cultivate and hoe them twice before the potatoes showed above ground, and cultivate once a week until they were a foot high. I dug them the middle of August and sowed the piece to barley, and gave the quack grass a little more punishment after death, and kept the soil covered during the winter, and the barley roots decaying kept it in good mechanical condition to

receive the strawberry plants in the spring. I never allowed ground to lay bare during the winter, but shall use rye instead of barley in the future, sow thick, and plough under at eighteen inches growth (as I have since found it better, to hold the moisture). I ploughed the early ground, as it would crumble nicely; harrowed it fine, and sat one and eleven-sixteenths acres, May 10 to 17, using my own plants, grown near by. Placing boxes on a stone-boat I dug the plants in clumps, leaving the dirt on, drew the piece and set them without using any water. Ninety-nine plants out of every hundred grew and scarcely a plant wilted the second day. The rows were three and one-half feet, plants about fifteen inches apart, a hundred and five rows of twelve rods length, nine varieties, but principally Lovitt, Bubach and Parker Earle.

30 Lovitt.	10 Greenville.	4 Timbrell.
21 Bubach.	8 Haviland.	3 Eureka.
20 Parker Earle.	5 Mammoth Beauty.	

Not any farm manure used, set by line and raked in twenty-five pounds Stockbridge fruit manure on each row as set. May 22 and 25, raked the entire piece with common garden rake and again ten days later; then cultivated with horse every ten days after until September, narrowing cultivator, growing wide matted rows. June 8, sowed 800 lbs. cotton-seed meal on the rows; June 26, sowed 2,000 lbs. fine bone on the rows; November 1, sowed 100 bushels ashes on the rows. Ashes were 20 to 25 per cent. lime mixed in, and many soft-wood ashes on the rows. Nov. 5, spread six to seven tons bog hay evenly over the entire surface; and during winter spread a few loads coarse manure on the rows, enough to hold the hay down during March winds. April 22, uncovered the rows, leaving hay in paths; May 2, sowed 100 bushels ashes (20 per cent. lime) on the rows. Picked first crate fruit June 19, and last quart July 30; yield 320 bushels. I sprayed the plants soon as leaves started to grow and again as soon as the first blossoms opened, using eight pounds sulphate copper, eight pounds of lime, and a quarter pound of Paris green to fifty gallons of water. Mulch when ground freezes enough to bear a load of hay and thick enough to hide every leaf. Later put on heavier. No amount of mulch will smother or weaken the plants, if taken as soon as frost comes out. Use hay or coarse manure, put on any time during the winter. I am not afraid of too much foliage, if there is enough potash and phosphoric acid in the soil to balance, or back up the fruit started with nitrogen. I never had a good crop of potatoes without a good show of tops. And in the winter is the only time it

pays to buy stable manure, if at all. I would not take any as a gift if I had to draw it three miles after spring opens, or pay over two or three dollars per cord for the best in winter; and there is as much difference as there is in fruit in value. If a bed is to be kept over I mow tops and rake them into the paths, then using six-tine forks, turn the mulching tops, etc., bottom up, narrowing the rows to a foot wide, clear out the weeds in rows, sow on some first-class commercial fertilizer and cultivate paths fine. Many new plants will fill in or widen the rows and some varieties give just as good crop the second year. For red raspberries, plow deep and fine, and fertilize as for good crop of corn or potatoes. I prefer to set the plants the last of October, in hills, at least five by five feet, and strong growers five by six feet, two plants in each hill, and put an extra large shovelful manure on the top after treading soil firmly about plants, and best to use scoop shovel. Corn and potatoes may be grown one way between the rows the first year, or a row of root or cabbage. If no winter protection is to be given to them, put back new growth when two feet high, to grow stocky canes, leave four to five in a hill; but if to be laid down, let them grow high and slender and allow eight to ten to remain in a hill. Lay them down soon after Nov. 1st and cover with earth from being broken by snowdrifts and drying winds, and the canes will come out in the spring, fresh and plump, not fated and shrivelled, as when exposed to the winds and changes of temperature.

Using the soil between the rows for covering, forms a trench to carry surplus water away from the hills, also leaves ground in shape to be worked much earlier in spring. Cultivate ground early as possible, making surface mellow and fine, to check evaporation and preserve the moisture stored in the soil. A good dust blanket is pretty good irrigation. Cultivate as often as necessary to keep dust on the surface, cut stakes six feet long and tie canes evenly about them, not all on one side. If chestnut stakes are used, by resharpening, they will last as long as raspberries are profitable. Take up canes as early as frost will permit, and cut them back to about five feet high. A dressing of fine ground bone and wood ashes or muriate of potash, once in two years is sufficient. Just how much to use the growth of plant and color of foliage will best tell you; this will give you the best quality of fruit in firmness, color, size, and flavor. If more nitrogen is needed, apply 200 to 300 pounds nitrate soda per acre when foliage is perfectly dry, and be careful not to hit leaves. If you can get cheap mulching, spread enough between the rows to shade ground. About middle of June, you may save enough clean fruit

from lower branches to pay for the mulch; it is broken up by pickers tramping, and worked into soil in fall when covering the canes, supplying vegetable matter to take place of farm manure, if any is needed in the soil. When a piece has nearly run out, apply good dressing of best fertilizer you can buy, early in spring as possible, and treat all new growth as weeds that season. In this way I have grown a good farewell crop. The Black Raspberries will not winter with me without protection, so I have given them up. I tried Doolittle, Gregg, Ada, Carman, Ohio, Earhart, etc. Have had of Red Turner, Shaffer, Marlboro, Hamsell, and others, but found none equal to Cuthbert, both red and yellow; berries are large, fine, and good flavor. I have picked them Saturday morning, kept them over to Monday and shipped them 160 miles, and they arrived in condition to sell for sixteen cents per quart, wholesale, past season. But this could not be done, raised in hedge-rows and on farm manure, or with irrigation. Yellow or white fruit can be sold in small quantities only, and requires great care in picking and handling—about one to five or six of the reds. There is no fruit that will pay better for neat and honest packing than strawberries and raspberries, and it is for our interest that every grower ship his fruit to market in best possible shape. When market is full of soft dirty fruit, the very best sells slow, at low prices. The business man is asked why he did not send home some berries for tea; he replies: "Berries were poor and soft to-day." "But were there no nice ones?" and he replies: "Well, yes; but I saw so much trash it took away my appetite for the best," etc. Fruit should run uniform, through the basket, and through the season. A gentleman from a neighboring city while purchasing some strawberries from a dealer in Pittsfield, said to the dealer, those are fine berries, I can occasionally get as nice at home, but am not always sure of them; the dealer replied that he had not received a crate of soft or dirty fruit from that grower for ten years, and he could guarantee just such the season through; thereupon the gentleman ordered six boxes sent him by express three times a week for a whole season (eighteen quart-boxes a week). Passing through Boston markets I noticed some neatly put up fruit, at one of the best stands in New Faneuil Hall market; I said to the dealer: "There must be money in that fruit for you;" he smiled, and replied: "Well it is fine fruit and nicely put up. I always give it the preference, for I can depend on it; if grower telegraphs a shipment made, I sometimes sell it all before it reaches me. There is not so very much money in it for me, but I like to see it in front of my store. I consider it an

honor to any man in Boston to handle those goods." Another grower, seven miles out of Boston, having to drive four miles over the pavements, a Mr. Worth of Melrose, fitted a spring bed in bottom of his wagon, delivered his strawberries to another dealer, fresh daily, boxes full, and received eighteen cents per quart for his entire crop, a few thousand quarts. Many berries leaving field in good condition are nearly ruined in transportation, by being thrown into car door at an angle of forty-five degrees, and get a drop of a foot or less, every time the crate is moved. Always cool fruit well before shipping, keep soft berries at home to sell nearby, or make them into jam, or syrups for the soda fountains, or fruit vinegars.

Blackberries will thrive on light soil, and with much less fertilizer than the raspberries require. And yet to do their best they require just as good cultivation, and more moisture to carry out the crop. Some seasons they have been the most profitable for me of any small fruit; while at other times they have come into competition with southern peaches and the wild berries from the mountains, cutting the price. We cannot compete with New Jersey to get good prices early; but many Jersey growers lost money the past season. One of them told me that he sold from a half acre just 1200 quarts nice Wilson, receiving from dealer after freight and commission was paid $18.60, which was only sixty cents more than the cost of picking them. Some growers there, having forty and fifty acres each, several carloads are shipped daily from some railroad stations; same grower received only five cents a quart for raspberries. He gave up the business, and has hired as foreman for a corn grower. I set them in the fall, or soon as frost is out in the spring, and give them same room as strong-growing raspberries, at least six by five feet and cultivate both ways, tie canes to stakes in fall, after cutting out the old wood that bore fruit. I do all work possible in fall, when there is more time to do it. Allow five or six canes in the hill; when tied close about a stake the fruit is all on outside of the hills, and no reaching in among the thorns for it, nor scratching your hide off when cultivating. I have tested Kittatinny, Snyder, Erie, Stone's Hardy, Wachusett, Agawam, etc., and have torn out all but the Agawam. It is as hardy as any, good size, jet black and excellent flavor, productive, and a good shipper; and with me has sold for three cents per quart more than any other variety I have found. And while customers would tire of other varieties in a couple of weeks, they call for Agawam as long as I can supply them. I have tried mulching, and think it pays to practice it, though thorough surface cultiva-

tion, if begun early as possible, is usually sufficient to carry the crop through on my soil. Thus we save much of the moisture stored during the winter, which is needed to work on the fertilizers used, and make the soup for the plants to take up in their growth; working the soil creates it, and raises the temperature; this also aids decomposition or hastens it, making plant and food available. Nearby or home markets are usually best, as our Saturday fruit, and that sometimes picked too damp to carry well, can be disposed of to better advantage; this helps the average, and we are able to do better than those on cheap lands with the cheap Italian labor in Jersey and Delaware. We are told there are 1000 known fruit insects; some of these attack the blackberry, also come rust, leaf-blight, and nutgall on the roots, etc. Agawam is not as subject to cane rust as Snyder and some others. May 1st I sprayed the canes with Bordeaux, made same as for strawberries, and again as they began to blossom. I think it was a benefit, as I saw no cane rust this season, and the foliage was much better than years previous. We must have good foliage on blackberries to obtain juicy and good flavored fruit of largest size.

There is a growing demand for gooseberries, but the fruit is mostly sold green. It grows very slowly. I treat them same as currants and get about same price per quart, wholesale. I prefer Red Jacket to any variety I have tried, as it is large showy fruit and productive, a more stocky grower than Smith's Improved, or Downing, here, and does not mildew.

Some of us can look back over the years and see the row of old currant bushes, as they grew beside the garden wall, and remember the well-browned turnovers, or larger pies, made by our grandmothers from their half-grown fruit, sometimes mixing them with the home dried apples that had been strung and dried around the kitchen the previous winter. Also how, later in the season, as we came from the hayfield with scythe on our shoulder, dry and hot, we would reach over the wall or through the fence and rake off some of the well-ripened fruit to quench our thirst and sharpen the appetite for dinner.

Those bushes always bore a good crop of small rich fruit of good flavor. They received no trimming, and scarcely any fertilizer or cultivation, except that given them by the chickens that gathered under their shade to scratch and wallow during the heat of the day.

This was before the chipper of the currant worm was so destructive. Few currants were then sold in the smaller cities and towns compared to the present. An old fruit-grower laughed at me for setting one-half acre fifteen years ago, and said I would be sour enough trying to sell

so many. But I think their use will continue to increase as people learn more ways of putting them up and mixing them with other fruits, sometimes using them in place of cranberries when price is lower. A quart of currants makes a fine sauce, and not expensive at recent prices; and the best is made without heating, quite a consideration in hot weather; heating acid fruits changes greatly the flavor, as seen in the strawberry.

I have a sample to show, for testing it; if you are not afraid of germs, just try it.

Currants thrive best in a heavy, deep, moist soil; and in bearing will stand it and pay for it to be well fertilized. But it will not do to give deep cultivation; disturbing the roots in spring causes many of the berries to drop from the stems, thus early shedding perhaps one-half the fruit.

Early in spring as possible plough directly in centre between the rows, throwing dirt each side toward the plants; then with hoes or very shallow cultivating, work it back to centre gradually, so as to give as level cultivation as possible.

Either purchase or grow strong two-year plants, and set them late in October; tread earth solid about the roots, and throw a large shovelful of manure on the top—use the scoop-shovel. This could be done after ground is frozen or during winter; it prevents heaving, and early spring rains wash enough into the soil to give them a good start and keep ground cool and moist. Cut back one-third to one-half each year's growth from the start, and cut out most of the sucker growth around the roots; in this way trimming is simple, you keep your bush compact and it grows stocky, with plenty of foliage to protect the fruit from late spring frosts and sun-scald, thus giving you a longer season to market the fruit in good order, bright and plump.

Currants grown this way will make good jell later in August, and we have picked them for table use in October from Victoria. Set them not less than 5–5 ft. Strong growers require nearer 6–6 if to be cultivated both ways, where the soil is suited to them, should have a good dressing of bone and potash in some form once in two years at least. The largest fruit always sells best, and can be picked at one-half the price of the small varieties. If possible, mulch the entire surface of the ground when berries are half grown, or before fruit weighs the bushes down into the dirt; this keeps fruit clean and increases size.

Spray with hellebore when first worms are found. Hellebore kills by contact as well as by eating it; use a large spoonful to three gallons

of water or, what is better, mix dry with four times the weight of some cheap flour, and thoroughly dust the bushes with it when they are damp with dew, or a recent shower; when put on this way it forms a paste that will last through the season and is safer to use than paris green. The currant-twig girdler appears about June 1st, depositing its eggs about an inch below where girdled; after hatching they work down the stem a few inches and come out. Remedy is to clip the stems two or three inches below where girdled. I tried this a year ago last June, and last season could find scarcely any affected on that piece. This insect is distinct from the stalk-borer, so says W. E. Britton, which works entire length of currant; the only thing to do is to cut out all the affected stalks and burn them at once. Fay's Prolific is most profitable for me, is large and productive, but Victoria is best for my family use. We have considered the requirements of some of the plants, soil, etc. Now, what is required in the grower? The first qualification is a love for the work; he must be one who takes pleasure in watching plant life, must have good patience and a great amount of perseverance and "stick." He must not only be able to give the best, but know how to sell it, when grown; he must be able to get the most out of hired help and have tact to get along with his dealers, not showing a disposition to want the big spoon every time, as there should always be a friendly feeling between grower and dealer, or perfect confidence; he must be honest and industrious the year around. Now, he who has these qualifications will succeed in most any business, and make money easier and faster than in raising small fruits, if that is his only object. But to one who enjoys the business and is well located, not having too large a farm, who is near markets or near a good shipping-point, there is much pleasure, and some seasons good profits. One can feel more independent and get more enjoyment out of life than when working for a salary or shut up in city away from nature and country life. Plenty of fruit and fresh air are worth something. Dollars and cents are not all there is in life that we should bend all our energies in that direction.

ANNUAL REUNION AND SOCIAL GATHERING.

MARCH 10, 1897.

The members and invited guests held an informal reception in the library and ladies' parlor from six until seven P. M. The company then marched to the banquet hall, Bicknell's orchestra playing a march. After prayer by Rev. M. H. Harris, an excellent menu was served by Curtis S. Yeaw.

At the head table were Col. H. W. Wilson, of Boston, member of the Massachusetts Horticultural Society, Hon. Aaron Lowe, of Hingham, E. W. Wood, of Newton, Member State Board of Agriculture, Edwin Hoyt, of New Canaan, Conn., Vice-President Conn. Pomological Society, Hon. C. W. Smith of Providence, R. I., Secretary R. I. Horticultural Society, Mayor and Mrs. A. B. R. Sprague, Hon. Stephen Salisbury, Hon. Henry A. Marsh, Mr. and Mrs. W. H. Sawyer, Mr. and Mrs. E. I. Comins, Rev. M. H. Harris, Lieut. Samuel Hathaway and H. H. Chamberlin, original members of 1842, Mr. and Mrs. James Draper, President O. B. Hadwen and Hon. Henry L. Parker, Toast-master. After spending an hour enjoying the good things, President Hadwen called the company to order.

ADDRESS BY PRESIDENT HADWEN.

Members of the Worcester County Horticultural Society; Ladies and Gentlemen:—

Again we extend to you, in behalf of the Horticultural Society, a most cordial welcome to this the 55th anniversary, as we come together in social intercourse. We may congratulate ourselves on the harmony of the previous years. I wish to extend our friendship to the members of the auxiliary Society, which we most heartily welcome. Our honored Secretary, who was with us one year ago at this time, and who sat at my left, who so faithfully served us for so many years, has gone to his reward. "Well done, good and faithful servant." We may feel to congratulate each other on our progress, compared with other Horticultural Societies in the country. The opportunity of seeing at our weekly and monthly exhibitions of fruit and vegetables, the increase in horticultural products has been made interesting. Our exhibitions teach our contributors to make careful selection of fruit, both in color, form and size. It has taught the proper cultivation of

soil, and how to ensure the best results. Flowers and trees are planted in the parks and private courts, each contributing its share to the art of Horticulture. Each season we renew these flowers, and this is a special part of the work of the Association. I well remember when only a few gardens ornamented the lands and an exhibition was unknown. Horticulture has always had its charms for both the rich and the poor. Our forefathers of this Society have passed to their reward; we have a duty to perform that we may honor our predecessors. The introduction of flowers and trees by this Society has helped to beautify the landscape; Newton Hill before the Parks-Commission system, for an illustration; a few years ago it was a common pasture, now it is crowned by trees and presents a beautiful landscape. But to turn to the feature of the evening. We are favored with the presence of many distinguished guests.

The occasion will be made very interesting by the speeches which are to follow, and we are favored to-night with the presence of toastmaster Henry L. Parker, who will have charge of the business.

ADDRESS OF HENRY L. PARKER.

Ladies and Gentlemen:—

I hope that none of you will think it is of my own free will and accord that I turn up every year as your toastmaster. I suppose that some of you have heard the story of the gentleman who was riding along with the farmer behind the old gray mare, which he called "Mary." The gentleman's curiosity was aroused. "What makes you call your horse 'Mary'?" "Named her after my mother-in-law, because she interferes." I said when your President asked me to take this position that I thought he had better pass it along; but he was inflexible, so I bow to his authority. We have gathered here to-night in response to our leader in this our own hall, paid for pretty much, for it is one of the richest societies. We have here representatives from Rhode Island, Connecticut, and the Massachusetts Society. The Mayor is here not simply to perform his duty, but because he likes to come. He wants a little recreation; he wants a little let-up from the course of municipal state; and I presume that he is now dealing with three-cent fares, big fires, etc. He has come here for a little recreation, but I am going to ask him to make a few remarks. It gives me great pleasure to introduce Mayor A. B. R. Sprague as the first speaker of the evening.

Mayor A. B. R. Sprague. *Mr. Toastmaster, Ladies and Gentlemen:*—Your last intimation of the toastmaster was to be brief, and no

nudging in that particular will be necessary. I am very glad to meet you, ladies and gentlemen; I am very proud to be a member of this Society. I am proud to be a member of the second wealthiest Horticultural Society in the world; think of it, you should be very proud of your standing. Now this Society was incorporated and organized when I came to Worcester to live as a boy. A few years ago I did take a few dollars in premiums. For two years I have come here without being able to pay for my banquet ticket; but it is of no use, the President, as the toastmaster says, is authority here and must be obeyed without question. If I read right the first horticultural society was formed in Eden. It had but one member to begin with, and he was president, secretary and treasurer. This one member was Adam, and finally it was decided to admit ladies to membership. There was some trouble about fruit, and I think it was mean in Adam to say what he did concerning Eve. I was going to ask my friend Dr. Harris to inform me on this question as it is a proper study. I do not think that he had any right to say that to clear himself. I think that it is a mighty mean thing in a man to remark about a woman as he did, and he ought to be ashamed of himself. As they went out to engage in horticulture, going down into the land of Israel, Moses, whom they had engaged as their leader, selected twelve stalwart men to select the land. But they went into the land of Canaan and found there by the brook of Eschol some grapes, and I say that this Society never produced such clusters of grapes as were raised there by the side of that brook. This is a true story, Mr. President; this is no Jonah story. I never have seen one on exhibition that could compete with this. I don't know what would be said of that bunch of grapes which the prophet Amos gathered at the sycamore tree, so that in those olden times we may acknowledge that the grower made more progress in raising grapes. We ought to be quite interested in the development made by the fruit growers. As you drive through the country and see beautiful flowers by the gate you will know that there are lovely people living within. I beg your pardon for taking so much of your time.

Mr. Parker.—The Pomological Society of Connecticut is also represented here by Mr. Edwin Hoyt, of New Canaan, Conn.

Mr. Edwin Hoyt. *Mr. President and Friends:*—I have met with two surprises,—one when I received the invitation from your honored President to attend the banquet, and the second when your toastmaster called upon me to speak. While I am a horticulturist I am not a speaker. I was not brought up that way, but at the same

time I cannot help but express my gratification for the surprises that I have had in being here this evening. I have always liked an organization which brought the ladies in. I never belonged to any society which was composed of gentlemen alone and I never want to. When I meet with ladies I always feel that I am in safe company. I am glad to be in the company where there are so many ladies who are interested in horticulture. There are ladies I know who are in sympathy with our work. I feel proud that I am a horticulturist. While I live over the line in the land of Canaan I can come here from home; and while I never visited Worcester, I see many faces that we have done business with for years; and I am proud to say that much of the fruit in this country first came from the New Canaan nursery. We have sent trees all over this State and you are receiving the benefit of our labor; it certainly is a promising business, it stands to the front. If we could go back fifty years and see what our grandfathers had and compare it with our business now, we would see a great contrast between the fruit of the present time and that of the olden time, also a difference in the way in which our grandfathers and grandmothers lived. When I look back and see my mother, who is now living and is 93 years old and a mother of ten children, and see the old spinning-wheel, she used to make our frocks and knit our stockings and then make comfortables, I don't see how a woman in those days could stand it; it is wonderful to me how they did it. Two years ago they started a creamery in New Canaan and in a short time Mrs. Hoyt said, "Let the cream go," and was glad to get it out of the house, and we won't get it back. You ladies here in the city don't realize what we farmers have to do. It was my good fortune two years ago to visit California. It was pleasant to see the plants growing in mid-winter, to see the fuchsia, calla and heliotrope in that country; but I tell you when I got home I was glad I lived in old Connecticut. There is no place like New England; there is no place where you can find such advanced cultivation as in old New England. I am glad that I was reared in New England. There are but few years that the President and myself have to work in this Society; fifty-five years now this Society has lived, and fifty-five years from this time we may see as much improvement in the horticultural line as we have seen in the fifty years of our life. The brother has spoken of the land of Canaan. Yes; "the land of Canaan" is a beautiful spot, especially new Canaan. I am better acquainted with new Canaan than I am with old. It is the land which flows with milk and honey. When I made up my circulars I put on them for my trade-mark a tree with

two men carrying a large bunch of grapes on their shoulders. I stamped it upon my letter-heads. A party out in Illinois sent for a circular of the "Green Mt. Grape." I got a letter back from him and he said, "What a lie! no one ever grew such a bunch of grapes as that in the world." I am taking up too much of your time. I am glad to be with you, and I hope I may have the opportunity to be with you again.

Mr. Parker.—Massachusetts, Connecticut, and Rhode Island, I believe, are the three oldest societies in this country; the Rhode Island Society is represented here to-night by its Secretary, Mr. C. W. Smith.

Mr. Smith. *Ladies and Gentlemen:*—I wish simply to express my acknowledgment of our Society to you. This, I think, is the fourth time that I have had the pleasure of meeting with you; each seems to be a greater pleasure, and when the invitation came to me for to-night I did not feel able to resist it. I had three other invitations for banquets, but I chose this one, and for this reason I am with you to-night, it must be because you gave so good a lunch. I remember reading the humorous works of "Josiah Allen's Wife." One of the quaint sayings which she made I was so pleased with that I put it on paper (reads), "I will have good victuals as long as I am Josiah Allen's wife." I regret the absence of the Secretary, who has gone to his reward. It is especially a feeling of sorrow to me, although not as well acquainted with him as some of you; it leaves me second oldest Secretary of the Horticultural Societies of New England. I thank you, Mr. President, for your kind invitation to be with you to-night.

Mr. Parker.—There are two or three representatives of the Massachusetts Society here to-night. I am going to call on H. W. Wilson as orator of the evening.

H. W. Wilson. *Mr. President:*—I think it is an unexpected honor. I have been enjoying the good time, and I feel a little embarrassed, for I don't hardly know where to begin. I might allude to one or two topics; take the grape, the grapes of Eschol and Syria are the largest grapes raised. Some bunches weigh from five to six pounds. There was a bunch raised in England which weighed nine and one-half pounds. At Boston a bunch was exhibited which was raised in this State and weighed eight pounds and twelve ounces. The Syrian grape is raised today, and bunches raised under glass have been known to weigh twenty pounds. I do not know but what I have lost the thread of

what I was going to say. But I do like to talk to people who are interested in the soil. You make a difference between Horticulture and Agriculture; where Agriculture leaves off Horticulture commences. In Agriculture a man has to grunt for a living, in Horticulture he cultivates the soil for fun. Four classes are interested in the cultivation of the soil: First, the one who depends upon his acres for subsistence, he feels that his success in life depends upon the earth; Second, the gentleman of leisure and wealth; Third, one who has the taste but no time; Fourth, the one who does it simply to make a display, just as some people are always buying books to keep up libraries in their houses, and try to pose as literary people, even if they never read the books. The first one of these four classes is the only one with whom I like to deal; and I find them men of truth, I find them men whom you can depend upon, men who are cordial and who meet you with sincerity. I have found these people my friends for the last twenty-five years. I find that these are certain characteristics that only the department of human labor can achieve. You go with me down on the Cape and you will find the little town of Mashpee, and you will find there a people as bright as any in New England. I went there as a disciple of Isaac Walton. These people are descendants of the Indians and they take a great deal of pride in their ancestry. A son of one of them came and took me to Falmouth; he had a nice democrat wagon and nice black horse and good harness and robe. Mr. President, I should like to talk longer, but there are others whom we want to hear from.

Mr. Parker.—The Fruit Growers Association is now holding its annual session in Worcester. That society, as you all know, was organized a few years since in our hall, and we might call it from our society. Its first president was a member of our Society and also the present president. He obtained his training as judge of fruit largely in our weekly exhibitions, and I now introduce James Draper, President of the Massachusetts Fruit Growers' Association.

Mr. Draper. *Mr. President, Ladies and Gentlemen:*—Having been chosen to preside over the Fruit Growers Association, an organization composed of practical growers and fruit farmers all over the State, I will state that it is but an outgrowth of this good old Horticultural Society, and I take great pride in having been associated in years gone by with those who gave so much to build up this Society. I recall with pleasure listening to Jaques, Earle and Colton, those early pioneers, who had so much to do with the early horticultural life of Worcester, and the lamented Secretary, Edward Winslow Lincoln,

for the past twenty-five years. Who could be associated with such a noble character without gaining inspiration for one's life's work! and I realize what a great responsibility is coming upon the younger men of this Society. Let us take up our work fully realizing the responsibility that is laid upon our shoulders; let us take it up earnestly, young men and women, and see that it does not suffer at our hands.

Mr. Parker.—There is another gentleman here to-night representing the Massachusetts Society to whom this Association is indebted for papers at our weekly meetings, for he is one of the most accomplished entomologists in the State. I take pleasure in presenting to you Mr. E. W. Wood, of West Newton.

Mr. Wood. *Mr. Toastmaster, Ladies and Gentlemen:*—It was my privilege to be present at your first banquet, five years ago. It struck me as one of the most pleasant and memorable occasions I had ever attended. I made the statement that the crowd you gathered that year was for the novelty of the thing, but I am glad to see that my predictions were not fulfilled and that your numbers seem to be limited only by the capacity of the hall. As you lose your active members from year to year, you will have no difficulty in replacing them by the other members as they come along. The work of the Massachusetts and Worcester Horticultural Societies has been substantially in the same line. We copied our mode of exhibiting fruit from the Worcester Society. Our exhibitions were made in classes of 20, 15, 12, 6, 3. Our committee first saw this method of exhibiting fruit in classes at Worcester, and then it was adopted by the Boston Society at the next meeting. Concerning the new crops or orchards, there is no place you can gain as much as in the exhibitions, there is no place where such a good idea of success or failure can be gained; those of you who have not been in the habit of doing this your fruit will shrink most terribly when you come to exhibit it. A gentleman in Roxbury told me one day, "I never was so disappointed in my life as I am to-day. I have been growing Seckel pears for an exhibition which I thought was next week. I have pears that are a third larger than any that are exhibited here." "Well," said I, "if you have pears like what you say you have go right home and get back as soon as you can." He took the cars and went home as soon as he could, and the committee was told what he had done. "I will be back at 12.30, so keep an eye out for me." He came with a little basket under his arm, walked up to the table where the pears were, lifted the cover of his basket, and how the perspiration started when he saw that those pears were more than half as large again as his! I said to

him, you saw the fruit at home on the trees and those Seckels looked as large as Bartletts. So you see this is the best thing that could happen to a man except the highest success; because had he not brought his fruit there, he would have always thought his fruit superior. When he went in and saw them, if he had been a true Yankee he would have asked how they were grown. I have never seen a horticulturist yet who was not willing to tell how he did it. Gentlemen, you must use your tongue as well as your eyes at an exhibition. If you watch when you are at an exhibition you will see men who are going to set out pear trees take out their memorandum books and put down what pears have the best color, which are the best for market use, which for café and hotel.

Mr. Parker.—Another member of the Massachusetts Society to whom we are indebted. He informs me that he has been talking all day at some institution. I will now introduce Hon. Aaron Lowe.

Hon. Aaron Lowe. *Mr. President:*—When I received your invitation some three weeks ago I was not aware that it was such a magnificent affair. I came here to-day, as I supposed, for the meeting of the Massachusetts Fruit Growers Association, and I certainly received great help. Take a backward look for perhaps forty or fifty years and call to mind the great improvement in flower and fruit. In looking back that time I see that the old Crab-apple is the only apple. Certainly in following along you can see that two societies have done a great work,—your Society and the Massachusetts. Frequently I have come across the names Hartwell, Hadwen, Rice and Kinney in our Boston exhibitions. I am glad to see so many ladies here to-night. A gentleman asked me what he could do to increase the membership of the Grange, simply get the young ladies to join and the young gentlemen will come. I certainly have been very much pleased to listen to the remarks made here to-night. We can look back and see that we have made great advances. Our friend Mr. Wood said we should start in raising fruit and vegetables. I had the honor of introducing certain kinds of vegetables that are to-day known as Lowe's.

In the fruit collection on the tables of the Massachusetts Society exhibitions there are every year new varieties coming forward. Mr. Hoyt spoke about the grape. We can remember when we were boys that there was no grape to be found except the old Isabella and the wild grape. Mr. President, I thank you very cordially for your kind invitation.

Mr. Parker.—I will now call upon a gentleman representing our

own Society, and by the time he has finished it will be time to pronounce the benediction. I will now call upon Mr. E. I. Comins.

Mr. Comins. It was my privilege about a year ago to take a trip to California, accompanied by my wife. While stopping with friends at Petaluma, Sonoma County, we chanced to hear of a Worcester County boy, Luther Burbank, located in Santa Rosa, sixteen miles from Petaluma. As he was born in Lancaster, Mass., where my wife was born, and as we learned somewhat of his wonderful success with fruits and flowers, we felt quite anxious to make his acquaintance and see something of what he has accomplished. Learning from a San Francisco paper, that he was a very busy man and much annoyed by curious visitors, I took the precaution to write him a line stating where we were from, that we proposed driving to Santa Rosa soon and that, if agreeable, we would call and give him a hearty New England handshake. Return mail brought a most cordial invitation to call at his home. We did so and no pleasanter hours were spent in California. The papers on the Pacific Coast speak of him as the "wizard of horticulture," the "Edison of plant life," etc., etc., and the work he has done in propagating new varieties of fruits and flowers is simply marvellous, and his wonderful success is another demonstration of what New England pluck and enterprise can accomplish.

His early education consisted of what could be acquired on the farm and what the schools of his native town could give. While still a boy he came to Worcester and worked in the shops of the Ames Plow Co. Owing to some trouble with his eyes, I think, he was obliged to seek out-door employment, and having a decided taste for rural life he went to the town of Lunenburg and engaged for a few years in market gardening. While here he put upon the market the "Burbank" seedling potato, now known throughout the country. This was before he was 21 years of age.

Later he went to California and engaged in the nursery business at Santa Rosa. After a few years of success in this business he sold it out and since then has devoted his attention exclusively to developing and putting upon the market new varieties of fruits and flowers, and with such success that his name is extensively known both at home and abroad. For this purpose he secured a tract of land some miles from his home, with soil exactly adapted to his purpose, sloping to the east for the morning sun, and near enough to the Pacific Ocean to receive the benefit of its beneficent breezes. We very much regretted we were not able, for want of time, to visit this garden,

where he said he had ten thousand calla lilies then in bloom. But at his home garden he showed us many plants of great interest. Among them was a red poppy with its petals silver lined, and a calla lily the blossom of which was a beautiful yellow. Other callas not then in bloom were of different colors. These, I think, came from Africa and the bulbs are valued at $100, and even more each. He continues to have much interest in our society, spoke of the members who have long been identified with it and inquired particularly about our honored President.

Mr. Parker.—The time for pronouncing the benediction has come and I will call on one of the original charter members, Lieut. Samuel Hathaway.

Lieut. Samuel Hathaway. — I stand here as a representative of the original members of the Society, and somewhere in this audience there is another gentleman, H. H. Chamberlin. In the hall below, hanging near the chandelier, are the portraits of Gov. Levi Lincoln and Daniel W. Lincoln, and soon there will hang another whom we all know, our honored Secretary and the great Park-Commissioner of this city, Edward Winslow Lincoln. But he has gone to join that throng of illustrious names. Men toil and strive and give the strength of youth and manhood to make a name. His memory is very great in the hearts of the community. There are hardly a half-score of the original members of 1842, and soon they will turn their toes up to the daisies.

Men die, but God's truths survive;
Flowers fade, and fruits decay;
But nature on them thrive
Fresh blossoming day by day.

Golden grain, fruits and flowers,
Of life's richest treasures are;
They bask in Eden's bowers,
They were all God planted there.

Oh let us then, plant and sow
Virtue's grains, beauty's flowers,
And may they to the harvest grow
In these grateful hearts of ours.

The formal exercises were brought to a close at half-past nine o'clock. The festivity of music and dancing was continued by the younger members of the Society and their friends until a much later hour.

ROLL OF MEMBERS

OF THE

WORCESTER COUNTY

HORTICULTURAL SOCIETY,

JULY 1, 1897.

Worcester, Mass.
PRESS OF CHARLES HAMILTON,
311 MAIN STREET.
1897.

ROLL OF MEMBERS

OF THE

WORCESTER COUNTY HORTICULTURAL SOCIETY.

By the term "Date," it is meant to comprise all the accessions of members from the original foundation of the Society. Where no numerals appear in that column, it is to be understood that the members, opposite whose names there are no figures, were entered upon the Roll of the Society previous to and coeval with the "List of Members," which was published in the "Transactions of The Worcester County Horticultural Society for the years 1852 and 1853."

Those members whose names are marked with a star (*) are dead.

A.

Date.	*Name.*	*Residence.*
	Adams, R. W.	Barre.
	Aldrich, Paine*	Worcester.
	Allen, W. E.*	"
	Allen, Rev. George*	"
	Allen, Hon. Charles*	"
	Allen, Samuel*	"
	Allen, James Frank*	"
	Armsby, J. M. C.*	"
	Angier, Roswell P.*	Toledo, O.
	Allen, Silas*	Shrewsbury.
	Allen, Lucius S.*	Worcester.
	Allen, Jonas H.	Shrewsbury.
	Allen, Asa H.*	"
	Allen, Rev. Joseph*	Northboro.
	Adams, Otis*	Grafton.
	Armsby, Lewis*	Northbridge.
	Allen, Rev. T. P.*	Sterling.
1855	Allen, Alvan*	Worcester.
1855	Allen, Mrs. Mary Ann*	"
1856	Allen, Benj. D.	"
1859	Aldrich, P. Emory*	"
1866	Adams, George A.*	"
1866	Allen, Mrs. Charles L.*	"
1867	Adams, John C.	"
1867	Armsby, Miss Ella A.	"
1867	Armsby, George F.	"
1870	Abbott, Ebenezer E.*	"
1870	Andrews, S. C.*	"
1871	Allen, Miss Lizzie G.	"
1872	Ames, Edwin	"

A.

Date.	*Name.*	*Residence.*
1876	Adams, John*	Worcester.
1879	Arnold, Samuel A.	"
1880	Abbott, Rogers A.	"
1886	Abbott, Justin A.	"
1891	Allen, William I.	"
	Allen, Hugh J.	"
1893	Alexander, Francis P.	"
1894	Andrews, George B., M. D.*	Fitchburg.
	Allen, Elizabeth J.	Worcester.
	Atherton, Mary E.	"
	Andrews, Albert Willard	"
	Allen, Joseph Albert	Auburn.
1897	Adams, Erastus	No. Grafton.

B.

Date.	*Name.*	*Residence.*
	Bancroft, Tim. W.*	Worcester.
	Boland, Tobias*	"
	Bickford, William M.*	"
	Bigelow, Lewis*	"
	Bradley, Osgood*	"

B.

Date.	Name.	Residence.
	Bowen, George*	Worcester.
	Burnside, Saml. M.*	"
	Bancroft, Charles P.	"
	Bullock, Alexander H.*	"
	Brown, Albert*	"
	Barton, Hon. Ira M.*	"
	Brown, William*	"
	Barbour, William C.*	"
	Blood, Oliver H., M. D.*	"
	Barnard, Ebenezer L.*	"
	Boyden, Joseph*	"
	Bowen, Ebenezer H.*	"
	Bigelow, Walter*	"
	Ball, Richard*	"
	Bartlett, Stephen*	"
	Barrows, William	"
	Burbank, John G.*	"
	Bates, George A., M. D.*	"
	Bowen, Charles*	"
	Bigelow, Walter, Jr.*	"
	Breck, Moses T.*	"
	Buffum, Benjamin*	"
	Berry, Zebina E.*	"
	Bates, H. G.	"
	Barton, William S.	"
	Barnard, John*	"
	Baylies, A.*	"
	Brooks, A. J.	Harvard.
	Burbank, James L.*	Worcester.
	Barker, William*	"
	Bond, Joseph*	"
	Bond, Jeremiah E.	"
	Banister, Emory*	"
	Blake, James B.*	"
	Bancroft, Mary C.	"
	Banning, E. M.*	"
	Butman, Benjamin*	"
	Butman, Sarah L.	"
	Bigelow, Walter R.*	"
	Beach, Lucius	"
	Briggs, Joseph*	"
	Blood, Mrs. O. H.*	"
	Bigelow, Charles*	Grafton.
	Brigham, E. L.	Worcester.
	Barnes, Artemas*	Berlin.
	Bisco, Dwight*	Leicester.
	Bottomly, Thomas*	"
	Bottomly, Booth*	"
	Brummett, Luke*	"
	Burr, Heman M.*	"
	Brooks, John*	Princeton.
	Banks, Thomas S.	Brookline.
	Boynton, John*	Templeton.
	Bowman, Charles D.*	Oxford.
	Boyd, John*	Shrewsbury.
	Burt, Ellis*	Douglas.
	Batcheller, Elhanan*	Sutton.
	Bowman, Jos.*	New Braintree.

B.

Date.	Name.	Residence.
	Ball, D.*	Spencer.
	Biscoe, Thos. C.	Grafton.
	Brigham, Charles	"
	Bates, Joseph N.*	Worcester.
	Babbitt, Pliny H.*	Barre.
	Buckley, Wm. T.*	Worcester.
	Bond, Thomas	No. Brookfield.
	Burrage, Leonard	Leominster.
	Banister, Mrs. Emory*	Worcester.
1853	Burbank, George G.*	"
1853	Barnard, George A.	"
1853	Bangs, Mrs. Mary G.*	"
1853	Bemis, Merrick	"
1855	Billing, Aaron*	"
1855	Brooks, J. H.	"
1855	Boyden, John*	"
1855	Bentley, Geo. W.	"
1855	Bryant, Mrs. E.	"
1856	Bigelow, George C.*	"
	Butman, George F.*	"
1858	Bull, Trumbull*	Grafton.
1859	Brown, Alzirus	Worcester.
1859	Ball, Phinehas*	"
1860	Barnard, Mrs. E. L.	"
1860	Batchelder, Ezra D.*	North Brookfield.
1862	Barton, George S.*	Worcester.
1863	Burgess, Daniel S.*	"
1863	Brown, Mrs. Jonas,*	Wilkinsonville.
1863	Bertody, Miss M. F.	Leicester.
1864	Barber, Miss R. E.	Worcester.
1864	Brown, Jonas*	Wilkinsonville.
1864	Brooks, Mrs. C. E.	Worcester.
1864	Banister, Miss Emma	"
1864	Burbank, Asa L.	"
1864	Barber, George*	"
1865	Barber, Mrs. George*	"
1865	Baker, Zephaniah*	Worcester.
1865	Bigelow, Luther H.*	"
1865	Bent, Charles M.	"
1865	Brown, George A.	"
1865	Burbank, Mrs. Geo. G.	"
1865	Burbank, Miss Carrie A.	"
1865	Burgess, Mrs. Danl. S.	"
1865	Bancroft, Mrs. Mary M.	"
1865	Bacon, Mrs. John E.*	"
1865	Barnard, Miss Caroline*	"
1865	Boyden, Elbridge	"
1866	Boswell, Mrs. Annie E.	"
1866	Bennett, Mrs. Sarah F.	"
1866	Brimhall, Silas J.*	"
1866	Baker, Jacob,	Dudley.
1866	Baker, Mrs. Jacob	"
1866	Barrows, A. Herb't	Worcester.
1866	Bennett, James	Leominster.
1866	Bachelor, C. O.	Northbridge.

B.

Date.	*Name.*	*Residence.*
1866	Bachelor, Mrs. Chas. O.	Northbridge.
1866	Belcher, Charles*	Worcester.
1866	Brown, Miss Josie E.	Wilkinsonville.
1867	Ballard, John S.*	Worcester.
1867	Bradley, Mrs. Osgood	"
1867	Barton, Mrs. Margaretta L. K.	Worcester.
1867	Bacon, John E.*	"
1867	Baker, Mrs. Z.*	"
1867	Bigelow, Mrs. Luther H.*	"
1868	Bowker, Sewall H.*	"
1870	Baldwin, John S.	"
1870	Barber, Miss Isabella G.	"
1870	Bullock, Mrs. Alex. H.*	"
1870	Bartlett, Mrs. Theo. H.*	"
1873	Barbour, Miss M. Jennie	"
1870	Bullock, Augustus G.	"
1870	Bullock, Miss Isabel H.	"
1870	Bullock, Miss Fanny	"
1871	Bush, William*	"
1871	Bush, Mrs. Isaac	"
1871	Brown, Thomas	"
1871	Blake, Fred. A.	Rochdale.
1872	Buck, Mrs. H. B.	Worcester.
1872	Bigelow, James W.	"
1872	Ballard, Harry	"
1874	Ballard, Edgar	"
1874	Brimhall, Mrs. Silas J.	"
1874	Bassett, D. H.	"
1874	Bruso, Elizabeth F.	"
1874	Bennett, A. H.	Holden.
1876	Bowker, Mrs. S. H.	Worcester.
1876	Ballou, A. A.	Grafton.
1871	Bemis, Daniel W.	Worcester.
1879	Brooks, Charles E.*	"
1880	Ball, Rev. George S.	Upton.
1881	Blood, Jefferson L.*	Worcester.
1882	Brooks, Walter F.	"
1882	Baldwin, Charles C.	"
1882	Babbitt, William E.	"
1883	Brierly, Joseph*	"
1883	Brastow, James B.*	"
1884	Blake, Mrs. C. L.	Rochdale.
1884	Bennett, Miss C. E.	Worcester.
1884	Brooks, Rev. Arthur A.	"
1884	Bartlett, E. A.	Shrewsbury.
1885	Bancroft, Isaac A.*	Worcester.
1886	Brierly, James L.*	"
1887	Bishop, Mrs. John W.	"
1889	Barnard, William C.	"
1890	Burnside, Elizabeth D.	"
	Barr, George L.	"
	Bennett, Ephraim L.	Millbury.
1891	Brierly, Moses F.	Worcester.
1892	Bowker, John B.	"
1893	Bryant, Charles H.	"

B.

Date.	*Name.*	*Residence.*
1894	Barton, Samuel R.	North Oxford.
	Ballou, Chas. Allen,	Worcester.
1895	Bryant, Mrs. Christopher	"
	Brown, A. Swan	"
1896	Brackett, Mrs. Frank D.	"
	Boyden, Frederick J.	Leominster.
	Bruce, Edgar M.	"
	Bowen, Mrs. William E.	Worcester.
	Brown, Albert H.	Westboro.
	Book, Hugo,	Worcester.
	Boardman, James E.	Rochdale.

C.

Date.	*Name.*	*Residence.*
	Clark, John F.*	Worcester.
	Chandler, George*	"
	Child, Benjamin N.*	"
	Colton, Samuel H.*	"
	Chase, Anthony*	"
	Chapin, Lewis*	"
	Chamberlain, Thomas*	"
	Chickering, C. C.	"
	Chamberlin, Henry H.	"
	Coe, William*	"
	Conant, Edwin*	"
	Chapin, Charles P.*	"
	Chenery, Horace*	"
	Coes, Loring	"
	Comins, D. B.*	"
	Chaffin, T. M.	"
	Curtis, Tyler P.*	"
	Chapin, Henry*	"
	Colton, Mrs. S. H.	"
	Chase, Mrs. Anthony*	"
	Canfield, Mrs. P. S.	"
	Cross, William*	"
	Clark, William C.*	"
	Culver, J. S.*	"
	Coes, Aury G.*	"
	Curtis, Albert	"
	Conklin, Henry W.*	"
	Champney, Samuel P.*	Grafton.

C.

Date.	Name.	Residence.
	Coleman, Charles C.*	Worcester.
	Cook, David W.*	"
	Clark, Henry O.*	"
	Chamberlain, George A.*	"
	Cutting, Jonathan*	Templeton.
	Clapp, John*	Leicester.
	Craig, Leonard*	"
	Cheney, Leonard	Southbridge.
	Capron, William C.*	Uxbridge.
1854	Canfield, Miss P. W. S.	Worcester.
1855	Carter, Rufus	"
1855	Conant, Mrs. Elizabeth*	"
1855	Conant, Miss Elizabeth*	"
1856	Champney, Preston A.*	Sutton.
1856	Champney, Samuel G.*	"
1856	Champney, Susan A.	"
1857	Chase, William M.	Worcester.
1858	Chapman, Isham S.*	"
1862	Clark, John S.*	"
1863	Crompton, George*	"
1863	Comley, James	"
1863	Chase, Nehemiah B.	Wilkinsonville.
1863	Cross, Courtland H.	West Warren.
1863	Crane Hosea*	Millbury.
1863	Clapp, Silas*	Worcester.
1864	Cushing, Rev. S. A.	Shrewsb'y.
1864	Cook, Sumner*	Worcester.
1864	Currier, Augustus N.*	"
1864	Chandler, Miss Fanny	"
1864	Chamberlin, Susan E.*	"
1864	Cook, Nathaniel H.	Bristol, Conn.
1865	Cutter, Calvin, M. D.*	Warren.
1865	Cook, William W.	Worcester.
1865	Curtis, Mrs. Joseph*	"
1865	Clapp, Mrs. Simeon	"
1865	Coes, Frank Loring R.*	"
1865	Chase, Charles A.	"
1865	Chase, Mrs. Charles A.*	"
1865	Clapp, Frederick A.	"
1867	Chamberlain, Mrs.Geo. A.	"
1867	Chase, Joseph*	"
1867	Claflin, John*	"
1867	Clarke, Josiah H.	"
1868	Coe, George F.	Grafton.
1869	Chase, Albert N.	"
1870	Cruickshanks, Geo.	Fitchburg.
1870	Chapin, Miss Annie T.	Worcester.
1871	Chapin, Mrs. Louisa*	"
1872	Carpenter, L. S.	"
1872	Chamberlin, Mrs. H. H.	"
1872	Colton, Mary R.	"
1873	Chaflin, Oscar	"

C.

Date.	Name.	Residence.
1873	Church, Moses*	Worcester.
1875	Coulson, John	"
1875	Chester, Miss Katie D.	"
1875	Cruickshanks, Mrs. Mary E.	Fitchburg.
1876	Coes, Mrs. F. L. R.	Worcester.
1876	Clark, George H.*	"
1878	Colton, Samuel H.	Auburn.
1878	Coes, Chester E. B.	Worcester.
1879	Currier, Elizabeth Dickinson*	Worcester.
1881	Copeland, Amasa A.	"
1883	Curtis, Mrs. James P.	"
1884	Cook, Herbert A.	Shrewsbury.
1884	Comins, Edward I.	Worcester.
1885	Chase, Mrs. H. M.	"
1886	Cowan, Thomas B.	"
1886	Chamberlain, Frank H.*	Hanover, N. H.
	Corey, T. F.	Northboro.
1890	Chadbourne, Alonzo H.	Worcester.
1891	Cochrane, Mrs. Albertina G.	Worcester.
	Cheney, Gustavus A.	"
1892	Chamberlain Frederick H.	"
1894	Clarke, Joseph T.	South Lancaster.
	Curtis, Edwin P.	Worcester.
	Carleton, Elbridge S.	"
	Crane, Ellery Bicknell	"
	Cooper, Charles,	Rochdale.
1895	Coes, Frederick L.	Worcester.
	Cowan, William H.	"
	Coggswell, Mrs. Jennie A.	"
1896	Conant, Mrs. Abbie S.	Cherry Valley.
	Condon, Mrs. Albert O.	Worcester.
	Clark, Mrs. Willis H.	"

D.

Date.	Name.	Residence.
	Davis, Hon. John*	Worcester.
	Draper, William A.*	"
	Dorr, Enos*	"

D.

Date.	Name.	Residence.
	Darling, Loron	Worcester.
	Dickinson, William*	"
	Davis, Hon. Isaac*	"
	Dewey, Francis H.*	"
	Davis, John C. B.	"
	Darling, H. G.	"
	Draper, Edwin*	"
	Day, Jonathan*	"
	Davis, Samuel*	"
	Daniels, F. H.*	"
	Dresser, George A.	"
	Dyer, Calvin*	"
	Dunbar, Rufus D.*	"
	DeWitt, Hon. Alexander*	Oxford.
	DeWitt, Horace S.*	"
	Dowley, Levi A.*	"
	Davis, George C.*	Northboro.
	Daniels, Nathan*	Leicester.
	Denny, Henry A.	"
	Denny, Joseph A.*	"
	Denny, Nathaniel P.	Norwich, Conn.
	Denny, George*	Westboro.
	Dodge, Harvey*	Wilkinsonville.
	Drake, Simeon A.	Sturbridge.
	Denny, Reuben S.*	Leicester.
	Davis, Henry G.	Millbury.
1854	Denny, Charles A.*	Leicester.
1854	Dwinnell, Leonard*	Millbury.
1854	Dana, John A.	Worcester.
1855	Daniels, George F.*	Oxford.
1858	Dudley, P. Whitin*	Whitinsville.
1859	Dodge, Pickering*	Worcester.
	Dixie, Edmund F.*	"
1864	Desper, William E.	"
1864	Dadmun, Appleton*	"
1865	Dewey, Mrs. Sarah B.	"
1865	Dewey, Carrie Clinton*	"
1865	Dewey, Rosebud*	"
1865	Davis, Edward L.	"
1865	Dodge, Thomas H.	"
1865	Dyer, Mrs. Calvin	"
1865	Dyer, Miss Hattie L.	"
1865	Dodge, Mrs. Benjamin J.	"
1866	Driscoll, Dennis*	"
1867	Draper, James	"
1867	Draper, Mrs. James	"
1867	Draper, Mrs. Edwin*	"
1869	Davis, Alfred	"
1869	Dudley, George J.	Sutton.
1869	Dutcher, Frank J.	Hopedale.
1870	Dawson, Thomas A.*	Worcester.
1870	Drury, Arthur H.	"
1871	Davis, Joseph E.	"

D.

Date.	Name.	Residence.
1873	Dawson, Mrs. Thomas A.	Worcester.
1875	Dana, Mrs. John A.	"
1881	DeLand, Mrs. E. H.*	"
1883	Darling, William	"
1890	Dewey, George T.	"
1891	Day, Charles B.	"
1894	Daniels, Mrs. M. M.	"
	Dalachie, Mathew B.	"
	Dodge, Benjamin J.	"
1896	Darling, Mrs. James F.	"

E.

Date.	Name.	Residence.
	Earle, Edward*	Worcester.
	Estabrook, James*	"
	Earle, John Milton*	"
	Earle, Mrs. Sarah H.*	"
	Earle, Mrs. Edward	"
	Earle, Timothy K.*	"
	Earle, Oliver K.*	"
	Earle, Thomas*	"
	Estey, James L.	"
	Earle, Anna B.	"
	Estabrook, Joseph*	Royalston.
	Edwards, John F.	Boston.
1855	Estabrook, James E.	Worcester.
1858	Eldred, Frederick A.*	"
1859	Estabrook, G. W.	Grafton.
1862	Eames, William*	Worcester.
1864	Eames, Miss Mary R.	"
1864	Ellsworth, Emory A.	Barre.
1865	Estabrook, George H.	Worcester.
1865	Estabrook, Daniel F.	"
1865	Earle, Miss Sarah F.	"
1866	Earle, Stephen C.	"
1866	Eastman, Miss Emma	"
1867	Estabrook, Mrs. Geo. H.*	"
1867	Emerson, Mrs. Jason*	Millbury.
1867	Eaton, Thomas B.	Worcester.
1867	Eaton, Mrs. Charlotte M.	"
1868	Ellsworth, Samuel*	"
1868	Eaton, Charles B.	"
1871	Earle, William H.	"
	Estabrook, Arthur E.	"

E.

Date.	*Name.*	*Residence.*
1873	Ellsworth, J. L.	"
1874	Earle, Mrs. Wm. H.*	"
1872	Eastman, William H.	"
1881	Eames, Luther R.	"
1892	Elwell, Edwin A.	"
1894	Evans, Mrs. Eliza W.	"

F.

Date.	*Name.*	*Residence.*
	Foster, Alfred D.*	Worcester.
	Fisher, Maturin L.*	"
	Fox, Lemuel J.*	"
	Flagg, David*	"
	Foster, Samuel B.*	"
	Fox, William B.*	"
	Flagg, Joel*	"
	French, Hiram*	"
	Flagg, Benjamin*	"
	Fuller, Elisha*	"
	Fox, William B. Jr.*	"
	Freeland, Charles W.*	"
	Flagg, Samuel, M. D.	"
	Flagg, Marshall*	"
	Field, John*	"
	Fitch, Ezra*	"
	Foster, Hon. Dwight*	"
	Fox, Miss N. Jane	"
	Flagg, Montraville*	Boylston.
	Flagg, Nahum	"
	Forbush, Calvin W.*	Grafton.
	Forbush, Curtis	California.
	Fitch, Dana H.*	Leicester.
	Flagg, Abijah*	Boylston
	Flagg, Stephen*	"
	Flagg, Benjamin*	Shrewsbury.
	Fairbanks, Orrin*	Westboro.
	Felton, Oliver C.	Brookfield.
	Fay, Peter*	Southboro.
	Forbush, Jonathan*	Bolton.
1854	Farnum, Joseph S.*	Worcester.
1855	Falconer, James D.	"
1856	Foster, Stephen S.*	"
1857	Ferguson, Samuel B.*	Westboro.
1858	Ferguson, George A.	"
1859	Ferguson, Henry C.	"
1863	Firth, Abram*	Boston.
1863	Foster, Adams*	Holden.
1863	Flint, Mrs. E. H.*	Leicester.

F.

Date.	*Name.*	*Residence.*
1863	Fayerweather, John A.	Westboro.
1863	Fiske, Edward R.*	Worcester.
1865	Fiske, Mrs. Edward R.*	Worcester.
1865	Farnum, Miss Ann Eliza	"
1865	Farnum, Miss Mary J.	"
1865	Fox, Miss Annie R. S.*	"
1866	Fuller, Mrs. James A.	"
1866	Francis, George E., M. D.	"
1866	Fisk, Miss Lydia C.	"
1866	Foster, Miss Alla W.	"
1866	Fox, Miss Maria	"
1867	Field, Samuel T.*	"
1867	Flagg, Mrs. Ebenezer	"
1869	Fisher, Simon E.	"
1870	Fisher, Mrs. Jennie M.	"
1871	Flagg, Mrs. Marshall	"
1872	Foster, Charles T.	Holden.
1874	Fitts, Mrs. D.	Oxford.
1874	Francis, Mrs. Elizabeth K.	Worcester.
1877	Fish, Henry C.	"
1881	Fish, Jonathan*	"
1881	Fiske, David L.	Grafton.
1886	Fairbanks, Alfred N.	Webster.
1892	Fuller, Homer T.	Worcester.
1896	Fobes, Mrs. William A.	"

G.

Date.	*Name.*	*Residence.*
	Green, John, M.D.*	Worcester.
	Gould, Hiram*	"
	Greenleaf, Frederick W.*	"
	Goodnow, E. D.*	"
	Goulding, Henry*	"
	Gates, Simon S.*	"
	Gould, Erasmus*	"
	Greenleaf, William*	"
	Gale, Frederick W.*	"
	Gilbert, Joseph A.*	"
	Gates, John*	"
	Goddard, Isaac*	"
	Goddard, S. B. I.*	"
	Green, James*	"
	Green, William N.*	"
	Green, Meltiah B.*	"
	Gilbert, Peregrine B.	"
	Green, Samuel F.*	"

G.

Date.	Name.	Residence.
	Gorham, Chester*	Barre.
	Gray, John, Jr.*	Worcester.
	Goodrich, Jesse W.*	"
	Gay, Wilkes	"
	Gregory, Joseph E.*	"
	Goss, William*	"
	Grout, Jonathan*	"
	Garside, James M.*	"
	Gill, George W.*	"
	Griggs, Joseph*	"
	Greenleaf, Sarah L.	"
	Green, Mrs. M. B.*	"
	Greenleaf, Mrs. Maria J.*	"
1854	Goddard, Benjamin*	"
1854	Goddard, John D.*	Shrewsbury.
1856	Greenleaf, Dolly A.	Worcester.
1856	Goddard, Silas	"
1859	Grout, J. Willie*	"
1860	Gleason, Charles W.	Holden.
1864	Green, Timothy Ruggles*	Worcester.
1864	Goodnow, Edward A.	"
1865	Goodell, Arthur A.*	"
1865	Goddard, Dorrance S.	"
1865	Gray, William L.*	"
1865	Gordon, Miss Elizabeth G.	"
1865	Gunderson, Christopher*	"
1865	Gilbert, Mrs. Chas. W.*	"
1865	Grout, Miss Lizzie	"
1865	Glazier, Henry*	"
1865	Garfield, Moses D.	Millbury.
1866	Gorham, Miss Mary E.	Worcester.
1866	Geer, George*	"
1866	Geer, Mrs. George	"
1866	Gates, Otis A.	"
1867	Gleason, Jonathan R.	"
1867	Goddard, Mrs. D. S.	"
1867	Green, Miss Julia E.	"
1867	Gleason, Joseph H.	Holden.
1867	Gordon, Albert A.	Worcester.
1867	Gordon, Mrs. Albert A.	"
	Gerould, Mrs. James H.	"
1871	Green, Samuel S.	"
1872	Gilbert, Charles W.	"
1874	Gibbs, Mrs. Mary E.	"
1874	Goodwin, Charles,	"
1879	Greenwood, Charles	"
1883	Gould, Abram K.	"
1883	Goddard, Mrs. Mary S.	"
1884	Gates, Harvelin T.	"
1893	Griffin, Thomas, Rt. Rev.	"
1894	Gates, Mrs. Frederick L.	"
1895	Green, J. Elton	Spencer.
	Green, Charles H.	"
	Gates, William H.	Worcester.

G.

Date.	Name.	Residence.
	Garst, Julius, M. D.	Worcester.

H.

Date.	Name.	Residence.
	Harris, Clarendon*	Worcester.
	Heard, Nathan*	"
	Hooper, William R.*	"
	Heywood, Daniel*	"
	Heywood, Benjamin F.*	"
	Haven, Samuel F.*	"
	Howland, S. A.*	"
	Harrington, Samuel*	"
	Howland, Henry J.*	"
	Hovey, William*	"
	Hill, Rev. Alonzo*	"
	Hamilton, Charles A.*	"
	Hadwen, Charles*	"
	Howe, Henry P.*	"
	Hammond, John*	"
	Harrington, F., Jr.	"
	Hawes, Russell L.*	"
	Hill, C. H.	"
	Harding, Samuel D.*	"
	Hall, Enoch	"
	Hadwen, O. B.	"
	Hemenway, Edward H.*	"
	Hale, Rev. Edward E.	"
	Harlow, A. R.*	"
	Hathaway, Samuel	"
	Hardon, Benjamin L.*	"
	Holmes, Pitt*	"
	Hill, J. Henry*	"
	Hartshorn, George F.	"
	Hall, Franklin	"
	Harris, O. F.	"
	Hoar, George F., Hon.	"
	Hartshorn, Jonas*	"
	Hartshorn, Calvin L.	"
	Hadwen, Mrs. Mary R.*	"
	Henderson, James G.*	"
	Harlow, Abner*	Shrewsbury.
	Heard, Samuel	Leicester.
	Henshaw, H. G.	"
	Hatch, Cheney*	"
	Holman, Parley*	"
	Haven, Luther*	Boston.
	Hill, Augustus G.*	Harvard.

H.

Date.	*Name.*	*Residence.*
	Hapgood, Lemuel B.*	Shrewsbury.
	Hunt, S. W.	"
	Holbrook, Cyrus	Sterling.
	Harrington, Stephen*	Millbury.
	Harrington, D. B.	"
	Hall, Charles	"
	Hale, Moses	Harvard.
	Hale, William*	Sutton.
	Heywood, Augustus	Grafton.
	Hastings, C. C. P.*	Mendon.
	Hill, Washington*	Spencer.
	Hartwell, Geo. W.*	Oxford.
	Holman, Amory*	Bolton.
	Hubbard, R. B.*	Sunderland.
	Hastings, Solon S.*	Princeton.
1854	Hacker, W. Alfred*	Worcester.
1854	Harrington, Adam L.*	"
1855	Harris, Mrs. Clarendon*	"
1856	Hartshorn, Mrs. Isabella F.	Worcester.
1858	Hunt, Francis W.	E. Douglas.
1860	Hartshorn, J. W.	Worcester.
1862	Heywood, Samuel R.	"
1862	Hall, Salmon D.*	Grafton.
1862	Harris, Gideon*	Worcester.
1862	Harrington, Chauncey G.	"
1863	Heywood, William H.*	"
1863	Hamilton, C. Willard	"
1863	Hammond, Parley*	"
1864	Huntington, Rev. Wm. R.	"
1864	Heywood, Miss Abby S.	"
1864	Hadwen, William E.	"
1864	Hadwen, Charles, Jr.	"
1864	Healey, Michael	"
1864	Howe, Mrs. E. M.	Sterling.
1864	Howe, William*	Millbury.
1864	Hubbard, Cyrus K.	Worcester.
1864	Heywood, Miss Emma H.	"
1864	Hadwen, Miss Amie B.	"
1865	Hascall, Jefferson*	Shrewsb'y.
1865	Hill, Mrs. J. Henry	Worcester.
1865	Heald, Jonas*	Worcester.
1865	Howe, Church	Holden.
1865	Hunt, Addison A.*	Shrewsb'y.
1865	Hemenway, D. M.*	Millbury.
1865	Houghton, Alba, Jr.	Worcester.
1865	Harrington, Halloway*	"
1865	Hamilton, Mrs. C. Willard	"
1865	Haven, Edwin*	"
1866	Hoyle, Miss Mary A.	Millbury.
1866	Holbrook, Wm. D.*	Worcester.
1866	Holman, Mrs. Henrietta A.	"
1866	Holbrook, Mrs. Wm. D.	"
1866	Holman, Mrs. William Y.*	"
1867	Hancock, Frederick	"
1867	Hartwell, Isaac B.*	Oxford.
1867	Haskins, D. W.*	Worcester.

H.

Date.	*Name.*	*Residence.*
1867	Hatch, O. L.*	Worcester.
1867	Hatch, Mrs. O. L.	"
1867	Hutchinson, Gerry*	"
1867	Hutchinson, Mrs. Gerry	"
1867	Hapgood, L. R.	"
1867	Hillard, Mrs. John	"
1867	Harrington, Mrs. Stephen	"
1867	Harris, Mrs. Gideon	"
1867	Harrington, Frank W.	"
1868	Holman, William Y.*	"
1869	Hancock, Miss Etta	"
	Hammond, Mrs. Henry K.*	"
1870	Hicks, Samuel P.*	"
1870	Hapgood, Joab*	Shrewsbury.
1870	Harlow, Wm. T.	Worcester.
1870	Harris, John A.	Rutland.
1871	Hamilton, Edw'd B.	Worcester.
1871	Hammond, Henry K.*	"
1871	Hamilton, Miss Fanny M.*	"
1871	Harris, Warren	Millbury.
1872	Hastings, J. E.*	Worcester.
1874	Hartshorn, Mrs. C. L.	"
1874	Hovey, C. H.*	Cambridgeport.
1874	Hadwen, Mrs. O. B.	Worcester.
1875	Hackett, William H.*	"
1880	Hixon, Adin A.	"
1880	Hixon, Mrs. A. A.	"
1880	Hall, Mrs. C. S.	"
1881	Houghton, C. C.	"
1882	Henderson, Mrs. A. E.	"
1884	Hoyt, Mrs. Henry A.*	"
1886	Howland, J. A.*	Worcester.
	Hall, Edward	"
	Head, Patrick*	"
	Howes, Isaac*	"
1887	Hough, John	"
	Hixon, Mrs. Francois W.	"
1891	Henry, John Edw'd	Westboro.
	Hall, Mrs. Edward	Worcester.
1893	Hammond, Frederick H.	"
1894	Hartshorn, Arthur E.	"
	Henderson, Anna May	"
	Henderson, Ida Josephine	"
	Henderson, Eleanor G.	"
	Hixon, Allyne W.	"
	Hartshorn, Annie M.	"
	Hodsdon, William M.	"
1895	Hodge, Clifton F., M. D.	"
	Houghton, Mrs. Abbie F.	"
1897	Holland, Frank H.	"

I.

Date.	Name.	Residence.
1896	Inches, George B.	N. Grafton.
	Inches, Mrs. G. B.	"

J.

Date.	Name.	Residence.
	Jaques, George*	Worcester.
	Johnson, Asa T.	"
	Johnson, Henry F., M. D.	"
	Johnson, Eli	"
	Jackson, William*	"
1854	James, Rev. Horace*	"
1854	Johnson, William*	"
1855	Johnson, Charles*	Northboro.
1855	Johnson, Joshua J.*	"
1855	Johnson, Oliver*	Sterling.
1856	Jaques, John C.*	Worcester.
1856	Jewett, Darwin E.	Westboro.
1865	Jones, Willard*	Worcester.
1867	Johnson, John F.	Northboro.
1867	Jones, Rev. J. D. E.*	Worcester.
1867	Johnson, Ida W.	"
1867	Johnson, Wm. H.	Northboro
1870	Jillson, Clark*	Worcester.
1870	Jenkins, Curtis	"
1874	Jewett, Ebenezer	"
1875	Jaques, Benjamin C.	"
1880	Jones, Herbert A.	"
1886	James, Benjamin	"
	Johnson, William H.	"
1891	Jackson, Joseph	"
	Jones, Mrs. Plinietta M.	"
1896	Jewett, Warren C.	"

K.

Date.	Name.	Residence.
	Kettell, John P.*	Worcester.
	Kinnicutt, Thomas*	"
	Knox, Samuel A.*	"
	Knapp, Joel*	Sutton.

K.

Date.	Name.	Residence.
	Kilburn, Eli*	Sterling.
	Kinnicutt, Francis H.*	Worcester.
	Kendall, Hon. Joseph G.*	"
	Knights, Jonathan H.*	"
	Keith, Timothy*	"
1854	Kinnicutt, Eliza M.	"
1854	Kinnicutt, Rebecca N.	"
1857	Kent, S. W.*	"
1858	Keyes, W. W.	West Boylston.
1865	Kimball, Mrs. Sarah A.	Worcester.
1865	Kelley, Dr. Francis H.*	"
1866	Keyes, Charles A.	"
1866	Keith, Henry R.*	"
1867	Kraft, Michael*	Leicester.
1867	Kinney, Mrs. W. P.	Worcester.
1867	Kinney, Frank J.	"
1868	Knowles, Lucius J.*	"
1868	Knox, S. Harrison	"
1869	Kinney, Wm. P.	"
1870	Kendall, Edward	"
1870	Kinnicutt, Leonard P.	"
1873	Kinnicutt, Mrs. Francis H.*	Worcester.
1875	Kendall, Mrs. George H.	"
1880	Kinney, Mrs. Ann M. F.*	"
1891	Kinney, Herbert R.	"
	Kinney, Mrs. Fannie E. Dodd	Worcester.
1892	Kendall, Louis J.	"
	King, Simeon E.	West Millbury.
1893	King, Mrs. Homer R.	Worcester.
	Kimmens, Gilbert A.	"
1896	King, Mrs. Simeon E.	West Millbury.

L.

Date.	Name.	Residence.
	Lincoln, William*	Worcester.
	Lincoln, John W.*	"
	Lincoln, Gov. Levi*	"
	Lakin, Ansel*	"
	Lovell, Joseph*	"
	Leonard, Samuel S.*	"
	Lincoln, D. Waldo*	"
	Lincoln, Edward W.*	"
	Lazell, Warren*	"
	Lincoln, William S.*	"

L.

Date.	Name.	Residence.
	Lamson, William C.*	Worcester.
	Lonergan, Patrick	"
	Lincoln, Mrs. D. Waldo*	"
	Lincoln, Miss G. De V.*	"
	Lincoln, Miss Mary W.	"
	Lovell, A. Beaman*	"
	Lincoln, Miss Frances M.	"
	Lamb, Josiah Q.*	Leicester.
	Loring, John*	"
	Lamson, H. O.*	W. Brookfield.
	Leach, James*	Westboro.
	Leland, Joshua W.*	Grafton.
	Longley, James	Boston.
	Lovell, Mrs. Mary E.	Worcester.
1854	Lee, David*	Barre
1854	Lee, Henry A.*	Worcester.
1854	Lincoln, William*	"
1855	Lamb, Edward*	"
1855	Lovell, Joseph C.*	West Boylston.
1855	Lee, George H.	Barre.
1856	Lovering, Samuel F.*	Worcester.
1856	Lincoln, Levi, 2d.	"
1859	Leland, Horace*	Sutton.
1860	Lincoln, Waldo	Worcester.
1861	Lovell, Albert A.	"
1863	Lovell, Addison*	W. Boylston.
1864	Lincoln, John Waldo	Worcester.
1864	Lincoln, Annie Marston	"
1864	Lincoln, Marian Vinal	"
1864	Lee, Mrs. Dorcas B.	"
1865	Lincoln, Mrs. Kate Von Weber	Worcester.
1865	Lincoln, Marston	"
1865	Lewis, Benjamin*	"
1865	Lamb, Thomas M.*	"
1865	Lewisson, Louis	"
1866	Lovell, John D.	"
1867	Lynam, Mrs. John	"
1867	Lamb, Mrs. T. M.	"
1868	Lincoln, Adeline Sever	"
1868	Lovell, Cyrus A.	"
1870	Lamb, Alice B.	"
1870	Lovell, Miss Abby M.	West Boylston.
1870	Lincoln, Helen	Worcester.
1871	Loomis, H. F.*	"
1871	Lange, Hermann F. A.	"
1872	Lincoln, Pelham Winslow	"
1874	Lovell, Mrs. C. Augusta*	"
1874	Lincoln, Mrs. William S.	"
1874	Lincoln, Mrs. Levi	"
1874	Lovell, Mrs. Jane M.*	West Boylston.
1875	Lincoln, Winslow S.	Worcester.

L.

Date.	Name.	Residence.
1875	Lincoln, Miss Kate Von W.*	Worcester.
1881	Lovell, Mrs. S. L. C.	"
1884	Lovell, Henry	"
1886	Lovell, George A.*	"
1887	Lange, Albert H.	"
1893	Littlefield, Henry F.	"
1896	Lincoln, William E.	Warren.

M.

Date.	Name.	Residence.
	Merrifield, Alpheus*	Worcester.
	Merrick, Francis T.*	"
	Miller, Henry W.*	"
	Messenger, David S.*	"
	Merrifield, F. N.*	"
	Merrifield, Ann B.*	"
	Merrifield, William T.*	"
	Merrifield, Catharine A.*	"
	Mason, L. L.*	"
	Maynard, William G.*	"
	Morse, James C.*	"
	Merrifield, A. M.*	"
	Mason, Joseph	"
	Miles, Charles M.*	"
	Miller, S. P., M. D.*	"
	Marsh, Alexander*	"
	Mason, John C.*	"
	Merrick, Sarah R.*	"
	Merrifield, Mrs. Wm. T.*	"
	Messenger, Elizabeth F.	"
	Miller, Ruth Ann	"
	Miller, Alice M.	"
	Merrifield, William F.	"
	Merriam, Thomas*	"
	Moore, David T.*	Boylston.
	Morse, Adolphus*	Roch'r, N. Y.
	May, Samuel, Jr.*	Leicester.
	Murdock, Joshua, Jr.*	"
	McFarland, H.	Framingham.
	Moore, J. H.	Charlton.
	Merriam, Isaac S.*	Auburn.
	McLellan, James	Sutton.
	Moen, Philip L.*	Worcester.
1854	Merrifield, Henry K.	"
1854	Metcalf, Caleb B.*	"
1855	Moore, Ashley*	"
1857	Mills, Isaac*	"
1857	Merriam, N. K.	Grafton.
1859	Merrifield, Maria J.*	Worces'r.
1859	Merrifield, Harriet	"

M.

Date.	*Name.*	*Residence.*
1859	Marble, F. M.*	Grafton.
1862	Morse, Edwin*	Worcester.
1863	Mascroft, W. D.*	Northbridge.
1863	Messenger, Miss Mary A.	Worcester.
1864	Mower, Miss Caroline C.*	"
1865	Marsh, Henry A.	"
1865	Merrifield, Mrs. Lucy A.*	"
1865	Morgan, Charles H.	"
1865	Messenger, Miss Susie S.	"
1865	Madaus, Charles	"
1865	Messenger, Frank L.	"
1866	Marble, Henry	Millbury.
1866	Morey, Oliver S.	Shrewsbury.
1866	McPherson, Mrs. Eliz. W.	Worcester.
1867	Morse, Mrs. C. D.	Millbury.
1867	Martin, Miss M. W.	Worcester.
1867	Morse, Mrs. Mason H.	"
1867	Murphy, John*	"
1870	McFarland, Edwin D.	"
1871	Morrison, Stephen,	"
1871	Morey, Mrs. L.*	Shrewsbury.
1872	Midgeley, John	Worcester.
1872	McIntire, Benj. F.	Millbury.
1872	Macullar, Addison*	Worcester.
1866	Moen, Mrs. Maria S. G.	"
1873	Morse, C., Jr.	"
1874	Mascroft, Henry C.*	"
1880	Morse, Miss Fanny C.	"
1881	March, David T.*	Millbury.
1882	Moore, Miss Sarah A.	Worce'r.
1882	Marble, Edward F.	"
1884	Merrifield, Mrs. F. H.	"
1886	McWilliams, Geo.	Whitinsville.
1886	McCracken, Geo. J.	Worcester.
	Moore, Elliott	"
1887	Mann, Charles F.	"
	Marble, Arthur J.	"
	Maynard, Wm. U.	Shrewsbury.
1894	Moore, Henry Ward,	Worces'r.
1895	McInnes, John C.	"
1896	Madaus, Frederick B.	"
	Midgley, Leonard C.	"
	Marble, A. Leslie	"

N.

Date.	*Name.*	*Residence.*
	Newcomb, Henry K.*	Worce'r.
	Nelson, Jonathan*	"
	Newton, Rejoice*	"
	Nash, Charles	"
	Newton, John C.*	"
	Nelson, Rev. John*	Leicester.
	Newton, Wm., M. D.*	Worce'r.
1854	Nourse, Benj. B.	Westboro.
1863	Nelson, Thomas L.	Worcester.
1863	Norcross, Thos. R.*	Shrews'y.
1864	Nichols, E. W.*	Worcester.
1865	Newton, Mrs. Jas. H.	Holyoke.
1866	Nichols, Mrs. C. P.	Worcester.
1867	Newton, Mrs. John C.*	"
1867	Newell, Mrs. Ann M.	Boylston.
1867	Newton, Miss S. E.	Millbury.
1872	Nelson, Mrs. T. L.	Worcester.
1880	Nelson, Miss Louisa B.	"
1883	Neilson, John	"
1894	Norcross, James A.	"
	Norcross, Mrs. James A.	"
1896	Newton, Benjamin S.	

O.

Date.	*Name.*	*Residence.*
	Oliver, Edward H.*	Worcester.
	Olney, Mrs. Richard	"
1863	Osgood, James H.*	"
1870	Olin, Matthias*	Springfield.
1866	Onthank, J. M.*	
1879	Overend, Walter E.	Worcester.
1886	Overend, Mrs. Samuel	"
	Osborne, John*	"
	O'Connell, William	"
1894	Orpet, Edward	So. Lancaster.

P.

Date.	*Name.*	*Residence.*
	Paine, Frederick W.*	Worce'r.
	Paine, Henry*	"
	Paine, Charles*	"
	Paine, Gardiner*	"
	Pratt, Joseph*	"

P.

Date.	Name.	Residence.
	Phillips, Moses D.*	Worcester.
	Pond, John F.*	"
	Pickford, J. K. L.*	"
	Phelps, Horatio*	"
	Paine, J. W.	"
	Perry, Samuel*	"
	Park, John*	"
	Pratt, Jotham B.*	"
	Perkins, Joseph*	"
	Phelps, J. Emory*	"
	Prentiss, Charles G.*	"
	Putnam, F. H.*	"
	Pratt, Sylvanus*	"
	Prentice, Henry*	"
	Paine, William R.*	"
	Piper, William*	"
	Putnam, Charles L.*	"
	Paine, Ann E.	"
	Paine, Mrs. Charles*	"
	Paine, Anna C. S.*	"
	Pratt, Sumner*	"
	Pratt, W. W.*	"
	Parker, Grenville*	"
	Putnam, S. P.	"
	Partridge, Joseph L.	Boston.
	Patrick, John*	Warren.
	Parmenter, Silas	Westboro.
	Perrin, Payson H.*	"
	Phelps, Henry R.	"
	Pierce, Charles A.	Grafton.
	Potter, Hervey K.*	"
	Porter, Joshua, Jr., M. D.*	North Brookfield.
	Pierce, Thomas*	Spencer.
	Pope, Jonathan A.	Millbury.
	Perry, Dexter H.*	Worcester.
	Peck, Frederick M.	"
	Parkhurst, Nathaniel R.*	"
1854	Paine, Nathaniel	"
1854	Partridge, Elbridge G.*	"
1854	Phelps, Henry	"
1854	Proctor, Edward	Spencer.
1855	Paine, Miss Alice W.	Worcester.
1855	Paine, Miss Elizabeth F.	"
1856	Peaslee, Abram*	"
1856	Patch, Whipple W.*	"
1856	Pratt, Daniel R.*	"
1857	Phillips, Luther*	"
1862	Phillips, Ivers	"
1863	Pond, Lucius W.*	"
1863	Pratt, Charles B.	"
1863	Phelps, George E.	"
1863	Pinkham, James S.*	"
1864	Phillips, Miss Marianne	"
1864	Pike, James T.*	"
1864	Pierce, Mrs. Charles L.*	"
1865	Paine, Mrs. D. H.	"

P.

Date.	Name.	Residence.
1865	Pratt, Mrs. Sumner	Worcester.
1865	Pratt, Miss Emma A.	"
1865	Pratt, Frederick S.	"
1865	Pratt, Edward R.*	"
1865	Pierce, James R.*	"
1865	Phelps, Mrs. Sallie	"
1865	Phelps, Miss Sarah D.	"
1865	Phelps, Miss Mary R.	"
1865	Phelps, Miss Deborah	"
1865	Phelps, Miss Helen E.*	"
1865	Peckham, George R.*	"
1866	Parsons, Mrs. Solomon*	"
1867	Parsons, Mrs. Samuel B.*	"
1867	Parker, Mrs. Aaron	"
1867	Piper, George M.*	"
1867	Parker, Henry L.	"
1867	Pierce, Charles L.*	"
1867	Pickett, Mrs. Josiah	"
1867	Phelps, John E.	"
1867	Peckham, Mrs. George R.	"
1868	Porter, Samuel A.*	"
1869	Putnam, Archelaus	Holden.
1870	Perry, S. Payson	Auburn.
1871	Palmer, Addison	Worcester.
1873	Putnam, Samuel	"
1874	Parker, Henry L., Jr.*	"
1874	Phelps, Mrs. Joseph E.*	"
1874	Pierce, George M.	"
1875	Pierce, John M.	W. Boylston.
1875	Pollard, Edward C.	Worcester.
1875	Pratt, Samuel A.	"
1875	Parker, Mrs. C. E.	Holden.
1876	Phelps, William E.	Worcester.
1878	Phelps, Mrs. Henry	"
1878	Peters, John L.*	"
1879	Parker, Charles E.	Holden.
1880	Pierce, James E.	W. Boylston.
1882	Perry, Miss Mary S.	Worcester.
1884	Putnam, Samuel H.	"
1884	Powers, Joseph W.*	"
1884	Pond, Willard F.	"
1886	Porter, Miss Juliet	"
	Putnam, Henry	"
	Pierce, Arba	"
1888	Potter, Burton W.	"
1892	Pond, Mrs. Willard F.	"
1893	Powers, Miss S. H.	"
1894	Peters, Lewis A.	"
	Perry, Joseph S.	"
	Potter, Mrs. Burton W.	"
1896	Parker, Mrs. Sarah A.	"
	Parker, Alice Louise	"
	Parker, Frank E.	"
	Parsons, Norman B.	"
	Parsons, Annie Gibbs	"

Q.

Date.	Name.	Residence.
1878	Quimby, H. M., M. D.	Worcester.
1890	Quinn, J. Frank	"

R.

Date.	Name.	Residence.
	Rice, George T.*	Worcester.
	Richardson, George W.*	"
	Richardson, Mrs. G. W.*	"
	Rice, Darius*	"
	Russell, George W.*	"
	Rice, Josiah*	"
	Rice, Thomas H.	"
	Reed, Benjamin*	"
	Rice, Sewall*	"
	Ramsay, O. A.	"
	Ripley, John C.*	"
	Rice, E. B.*	"
	Robbins, Charles B.*	"
	Rice, George M.	"
	Rockwood, Adams	"
	Rice, Mrs. Geo. T.	Worcester.
	Richardson, Anna M.	"
	Rice, Francis B.	"
	Randall, Abraham G.*	Millbury.
	Rice, Abbott B.*	Northboro.
	Rice, Danforth	Leicester.
	Rogers, Edward*	Webster.
1856	Ripley, Mrs. Sarah P. T.*	Worcester.
1856	Ruggles, Draper*	"
1856	Rice, George T.*	"
1856	Rice, Mrs. George T.*	"
1862	Ring, John	"
1863	Richardson, Charles*	"
1863	Richardson, Miss Fannie A.	"
1865	Read, Miss Sarah E.	"
1865	Rogers, Israel M.*	"
1865	Richardson, Mrs. Charles	"
1866	Reed, L. R. S.*	"
1866	Robinson, James*	"
1866	Rice, Mrs. S. Elizabeth	"
1866	Robinson, Mrs. James	"
1867	Rice, Ezra B.	"
1867	Rice, Mrs. J. Marcus*	"
1870	Rogers, James S.	"
1871	Richardson, Clifford	"
1872	Rice, Peter*	"
1874	Rice, Miss Louisa A.	"

R.

Date.	Name.	Residence.
1875	Rogers, George W.*	Worcester.
1876	Reed, Henry, Jr.	"
1879	Rice, George Calvin	"
1880	Rogers, Mrs. Nellie F.	"
1880	Rice, Abner	"
1881	Record, S. H.	"
1881	Record, Mrs. S. H.	"
1881	Rich, Mrs. Annie P.	"
1881	Rich, George H.	"
1883	Reynolds, Henry T.	"
1884	Rice, Alden	"
1887	Rockwood, Calvin R.	"
1890	Reed, Charles G.	"
1890	Rugg, Arthur P.	"
1893	Reed, Karl B.	"
1894	Robinson, Alfred M.	"
1895	Robinson, Chas. Henry	"
	Rich, Henry E.	"
1896	Ross, Walter D.	"
	Rathbun, Edward,	"

S.

Date.	Name.	Residence.
	Salisbury, Hon. Stephen*	Worcester.
	Shepherd, James*	"
	Smith, Chandler*	"
	Stowell, David D.*	"
	Sweetser, Rev. Seth*	"
	Stone, Daniel*	"
	Stowe, Elijah*	"
	Shepherd, James, Jr.	"
	Stone, Aaron, Jr.	"
	Stowell, L. W.*	"
	Scott, Samuel B.*	"
	Sargent, Joseph, M. D.*	"
	Southwick, Edward*	"
	Story, Simeon N.	"
	Spooner, Moses*	"
	Stoddard, Elijah B.	"
	Scott, David, Jr.*	"
	Stebbins, Edward S.	"
	Smith, Lewis*	"
	Sargent, Henry, M. D.*	"
	Salisbury, Mrs. S.*	"
	Smalley, Rev. Elam*	"
	Stone, Samuel V.*	"
	Smith, Lemuel*	"
	Smith, Samuel*	"
	Selby, Samuel H.*	"

S.

Date.	Name.	Residence.
	Southgate, Isaac*	Leicester.
	Sargent, Joseph D.*	"
	Sargent, John*	"
	Stone, Abijah*	"
	Sargent, Homer E.	"
	Slater, George B.*	Webster.
	Sibley, Jonas L.*	Sutton.
	Slocomb, Horatio*	Saundersville.
	Snow, Henry*	Shrewsbury.
	Stone, Job C.*	"
	Slocomb, J. W.*	Grafton.
	Smith, Asa F.	"
	Sanford, Rev. William*	Boylston.
	Stone, Joseph	Westboro.
	Southworth, Chas.	Northboro.
	Sibley, D. B.	Millbury.
	Sumner, Sullivan	Milford.
	Smith, R. R.	Lynn.
	Symmes, C. T.	Lancaster.
1854	Sears, Sylvanus	Worcester.
1854	Smith, Larkin*	"
1854	Stowe, Martin*	"
1855	Snow, Winsor N., M. D.*	"
1855	Strong, Francis*	"
1856	Smith, L. F.	Northbridge.
1856	Sprague, A. B. R.	Worcester.
1856	Stiles, Francis, Jr.	"
1860	Stone, Josiah G.*	Shrewsbury.
1862	Swett, William O.	Worcester.
1862	Stone, Timothy S.*	"
1862	Sawyer, Ezra	"
1863	Stearns, Edwin*	Millbury
1863	Struthers, William C.*	"
1863	Slocum, George F.*	Grafton.
1863	Swan, Elliott*	Worcester.
1864	Searles, Miss Lydia A.	Wilkinsonville.
1864	Sawyer, Stephen	Worcester.
1865	Salisbury, Stephen, Jr.	"
1865	Scofield, James M.*	"
1865	Smith, Charles W.*	"
1865	Scott, Mrs. David	"
1865	Sumner, Mrs. George	"
1865	Sumner, George*	"
1865	Smith, Miss Harriett A.	"
1865	Smythe, W. A. S.*	"
1865	Smith, J. Sargent	Leicester.
1866	Scott, Miss Alice	Worcester.
1866	Sears, Alden H.	"
1866	Smith, James A.*	"
1866	Smith, Sidney	"
1866	Shaw, Mrs. John B.*	"
1867	Sturtevant, Mrs. Harvey	"
1867	Smith, Mrs. Sarah M.	"
1867	Streeter, John P.	"
1867	Stone, Mrs. Lottie J.	"

S.

Date.	Name.	Residence.
1867	Stone, Miss L. Jennie*	Worcester.
1867	Stone, Miss Mary A.	"
1867	Stone, Miss Lizzie	"
1867	Stone, George H.	"
1867	Sanders, Eri*	"
1868	Skinner, Miss Kate J.	"
1868	Smith, Woodbury C.	"
1871	Stowe, Luther*	"
1871	Spinney, George	"
1871	Southwick, Thomas	Leicester.
1872	Schaff, Mrs. Sarah D.	"
1872	Stiles, Frederick G.	Worcester.
1872	Smith, Chas. Henry	Millbury.
1874	Southwick, Mrs. T.	Leicester.
1874	Stiles, Mrs. F. G.	Worcester.
1874	Staples, Samuel E.	"
1874	Searles, David H.	Sutton.
1875	Smith, S. H.	W. Boylston.
1877	Stone, Charles W.	Worcester.
1879	Smith, Miss J. F.	"
1879	Smith, Miss Mary A.	"
1880	Smith, Charles D.	"
1881	Smith, Thomas	"
1882	Sargent, Mrs. Wallace E.	"
1886	Sprague, Horace E.	"
1890	Stratton, Frederick A.	"
1892	Sears, Philander	"
1892	Stockwell, Hon. J. W.	Sutton.
1893	Stevens, Henry E.	Worcester.
1894	Sibley, Lewis W.	"
	Stanley, Annie Maude	"
1895	Smith, Harlan A.	"
1896	Stone, George E.	Shrewsbury.
	Stone, George E.	Amherst.

T.

Date.	Name.	Residence.
	Thomas, Hon. Benjamin F.*	West Roxbury.
	Tolman, Albert*	Worcester.
	Tead, Nathaniel*	"
	Taft, Putman W.*	"
	Tower, Horatio N.*	"
	Taft, George C.*	"
	Trumbull, George A.*	"
	Tainter, Daniel*	"
	Thurber, Charles*	"
	Tourtellott, S.*	"

T.

Date.	Name.	Residence.
	Tucker, Thomas*	Worcester.
	Taft, Stephen*	"
	Thomas, Mrs. B. F.*	"
	Tenney, Daniel*	Sutton.
	Taylor, Samuel*	"
	Thayer, Joseph*	Uxbridge.
	Taft, Bezaleel*	"
	Torrey, Samuel D.*	Millbury.
	Taylor, Thomas	Dudley.
	Taft, Lewis S.	Uxbridge.
	Tucker, Augustus*	Worcester.
1854	Thurston, Joseph*	"
1854	Tiffany, P. Dexter*	"
1855	Thurston, David C.*	"
1855	Thurber, Mrs. M. F.	"
1856	Tiffany, Mrs. H. K.	"
1856	Trumbull, Miss Susan	"
1856	Tiffany, John K.	"
1856	Thomas, Benj. F., Jr.*	"
1858	Thompson, William C.*	"
1859	Tourtellott, S. D.*	"
1860	Thurston, William H.	Oxford.
1862	Trumbull, John*	Worcester.
1863	Taft, Calvin*	"
	Tainter, Harvey S.*	"
1864	Tainter, Mrs. Daniel*	"
1864	Thayer, Alexander*	"
1864	Taft, Mrs. Calvin	"
1865	Thompson, Simeon E.*	"
1865	Taft, Lyman J.*	"
1865	Taft, Mrs. Lyman J.	"
1865	Taft, Henry G.	"
1865	Turner, Mrs. Peter J.	"
1865	Taft, Edward C.	"
1865	Thayer, Benjamin*	"
1865	Tower, Miss Addie L.	"
	Thayer, Perry*	"
1866	Thayer, Horace*	"
1866	Thayer, Mrs. Horace	"
1866	Tainter, Mrs. E. C.	"
1867	Tainter, Ephraim C.	"
1867	Trask, Mrs. F. J.	Leicester.
1867	Tarbox, John L.*	Worcester.
1870	Taylor, R. C.	"
1870	Townsend, Velette P.	"
1870	Thayer, Charles D.	"
1871	Thompson, C. O.*	"
1872	Tainter, Charles E.*	"
1874	Thompson, Miss Ella G.	"
1876	Thurston, L. D.	Leicester.
1878	Tolman, Miss Mary	Worcester.
1883	Talbot, Thomas	"
1884	Tourtellott, Daniel C.*	"
1889	Thayer, Alden	"
1894	Tourtelotte, Mrs. Eliz. R.	"

U.

Date.	Name.	Residence.
	Upham, George*	Worcester.
	Upham, Baylies*	"
	Underwood, Orison*	Milford.
	Underwood, Austin	Westboro.
1866	Upham, Harvey G.*	Worcester.
1870	Upham, Roger F.	"
1881	Upham, Mrs. Harvey G.	"

V.

Date.	Name.	Residence.
	Vaill, Edward W.	Worcester.

W.

Date.	Name.	Residence.
	Waldo, Hon. Daniel*	Worces'r.
	Washburn, Ichabod*	"
	Workman, Wm., M. D.*	"
	Woodward, Rufus, M. D.*	"
	Wheeler, William A.*	"
	Washburn, Hon. Emory*	"
	White, James*	"
	Willard, Fitzroy*	"
	Whiting, Charles H.*	"
	Williams, William A.	"
	Whittemore, Charles	"
	White, Charles*	"
	Walker, Asa*	"
	Walker, Benjamin*	"
	Walker, Joseph, Jr.*	"
	Williams, Warren*	"
	Ward, Artemas*	"
	Wheeler, Miss F. N.*	"
	Wheeler, George W.*	"
	Wheeler, William F.	"
	Ward, Daniel*	"
	Whiting, Charles B.	"
	Whittemore, Miss E. J.	"
	Whitcomb, John P.*	Harvard.
	Woodward, Samuel B., M. D.*	Worcester.
	Waters, Asa H.*	Millbury.
	White, George W.	Cambridge.
	White, Alonzo*	Leicester.

W.

Date.	Name.	Residence.
	Watson, Horace C.	Leicester.
	Woodcock, Josephus*	"
	Woodcock, Lucius*	"
	Whitin, Hon. Paul*	Whitinsville.
	Whitin, John C.*	"
	White, Charles	Northbridge.
	Wing, Hiram*	"
	Work, John W.*	Templeton.
	Weed, Jared*	Petersham.
	Whiting, B. D.	Boston.
	Whiting, B. G.	Lunenburg.
	Wheeler, Jonathan D.*	Grafton.
	Wood, Samuel*	"
	Wheelock, William A.	Dudley.
	Wheaton, Henry S.*	California.
1854	Wheeler, Charles A.*	Worces'r.
1854	Woodward, J. L.*	Millbury.
1854	Willard, Mrs. Fitzroy*	Worcester.
1855	Whiting, Benjamin F.	"
1855	Williams, James Otis*	"
1855	Washburn, Henry S.	"
1855	Ward, Samuel D.	Shrewsbury.
1855	Whittier, C. V.	Northbridge.
1856	Whitin, N. D.*	"
1856	Wood, J. G.*	Millbury.
1856	Whiting, Geo. W.	Worcester.
1857	Williams, Hartley*	"
1858	Woodward, Henry	"
1858	Woodward, Samuel*	"
1859	Ward, Thomas W.	Shrewsb'y.
1862	Willard, Calvin*	Worcester.
1862	Wyman, Mrs. Abby	"
1862	Wyman, Miss Nellie M.	"
1862	Wood, Newell*	Millbury.
1863	Wheeler, William H.	Grafton.
1863	Warren, John M.*	Worcester.
1863	Washburn, Nathan	"
1863	White, William	"
1863	Whitcomb, Carter*	"
1863	Warren, Rufus C.*	Grafton.
1863	Whittier, Mrs. Nellie S.*	Worcester.
1863	Wing, Henry F.*	Grafton.
1864	Works, Edwin D.	Fitchburg.
1864	Wheeler, Mrs. Nelson	Worce'r.
1864	Wheeler, Henry A.*	"
1864	White, Dea. Cyrus*	Millbury.
1864	Workman, Miss Louisa J.	Worcester.
1864	Whipple, Franklin*	"
1865	Woodcock, Theo. E.	Leicester.
1865	Wheeler, Mrs. G. W.*	Worce'r.
1865	Wheeler, Miss Mary G. B.*	"
1865	Williams, Miss Henrietta F.	Worcester.
1865	Williams, Miss Mary E.	"

W.

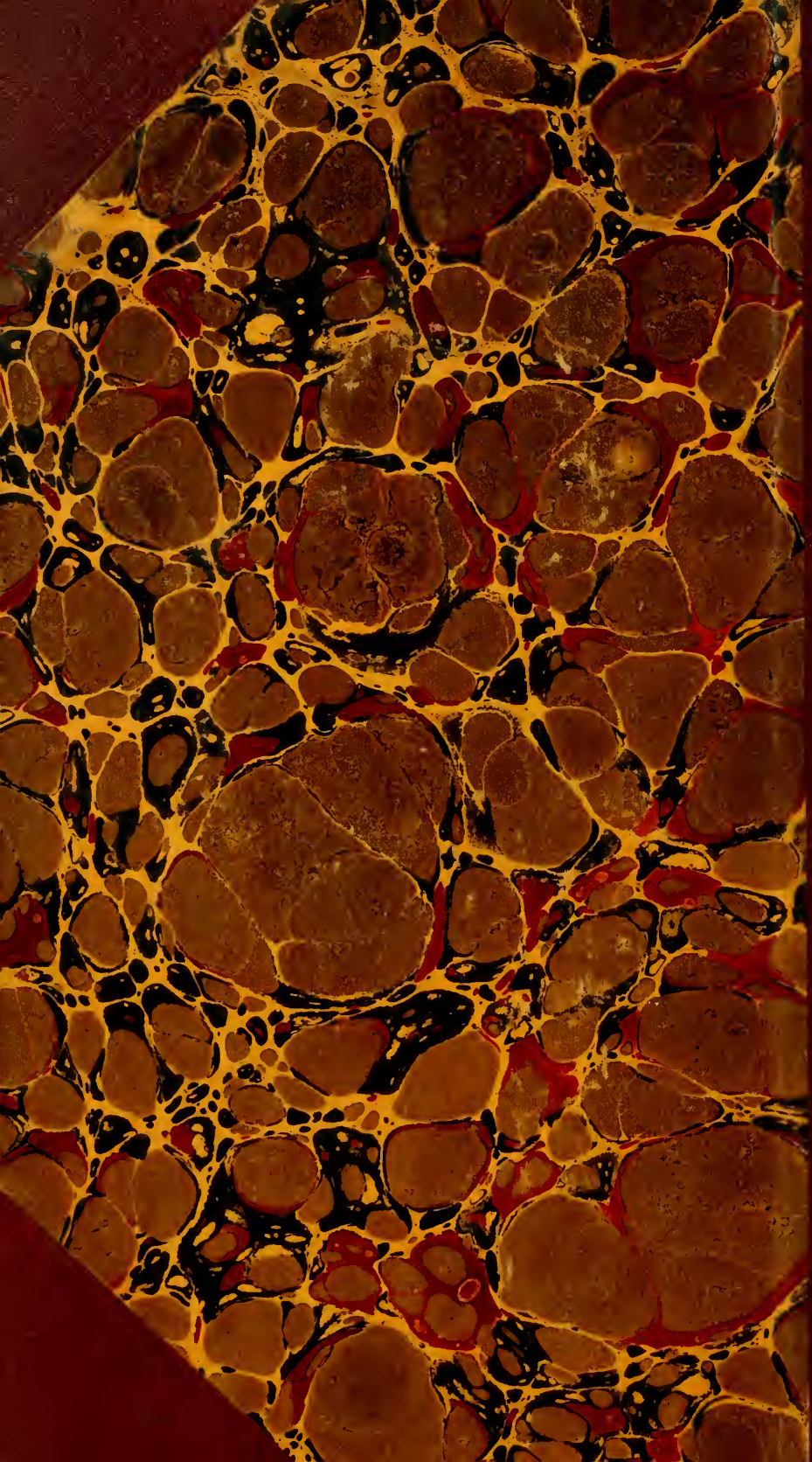
Date.	Name.	Residence.
1865	Workman, Mrs. Wm.*	Worcester.
1866	Wheeler, Miss Nancy*	"
1866	Wellington, Timothy W.*	"
1866	Wellington, Mrs. T. W.	"
1866	Wellington, Fred'k W.*	"
1866	Whiting, Miss Mary F.*	"
1866	Whittier, Melvin O.	"
1866	Winn, Mrs. Francis*	"
1866	Warren, John D.*	"
1867	Williams, Mrs. Hartley	"
1867	Whittemore, Mrs. Asa D.	"
1867	Willard, Miss Mary E.	"
1867	Wheeler, Erastus S.*	Berlin.
1867	Wilson, George W.	Worcester.
1868	Ward, Mrs. Daniel	"
1868	Willard, Mrs. Calvin*	"
1868	Waite, Andrew J.	"
1869	Woodwell, Charles H.*	"
1870	Whittemore, Mrs. Charles	"
	Weston, Miss J. A.	"
1871	Washburn, John D.	"
1871	Witherby, L. B.*	"
	Waters, Charles H.*	Groton.
1871	Willis, Clara	Worcester.
1872	White, Miss Lizzie	"
1872	Walker, Joseph H.	"
1872	Watson, L. S.	Leicester.
1872	Woodward, Mrs. Mary E.	Worcester.
1873	Whitcomb, G. Henry	"
1873	Whitcomb, Mrs. Abbie E.	"
1873	Ward, Frederick W.	"
1874	Whittier, Miss Mabelle E.	"
1874	Ward, Miss Ella H.	Shrewsb'y.
1874	Williams, Mrs. Warren	Worcester.
1875	Workman, Dr. Wm., Jr.	"
1879	Willard, Dr. Franklin B.	Boylston.
1880	Ward, Mrs. Thomas	Worcester.
1880	Watts, H. B.	Leicester.
1880	Wakefield, C. H.	Worcester.
1882	Woodis, Mrs. Julia	"
1882	Ward, Mrs. Austin W.	"
1882	Watts, Mrs. H. B.	Leicester.
1882	Wilson, Mrs. Abiel E.*	Worcester.
1884	Wyman, O. B.	Shrewsbury.
1885	Wesson, Frederic H.	Worces'r.
1886	Wood, William J.	"
1887	Wheeler, William J.	"
1888	Winslow, Samuel E.	"
1891	Watts, Walter G.	Leicester.
1893	Wetherbee, Gustavus E.	Worcester.
	Wetherbee, Mrs. Gustavus E.	Worcester.

W.

Date.	Name.	Residence.
1894	Wight, Stanley G.	Brookfield.
	White, Franklin B.	"
	Watts, Edward J.	Leicester.
	Watts, Annie Viola	"
	Watts, Florence Emma	"
	Watts, Sarah May	"
	Wood, Charles M.	Upton.
1895	Weeks, Eslie A.	Worcester.
1895	White, A. Avery	"
1896	Wilson, Dwight E.	"
	Wesby, Mrs. Herbert	"
1897	Watson, John B.	"

Y.

Date.	Name.	Residence.
	Young, Loring*	Leicester.
1854	Young, Priestley*	Worcester.
1864	Young, Mrs. Priestley*	"
1871	Young, Mrs. Julia	"
1889	Yanchoukoski, John	"
1896	Yeaw, Curtis S.	"

HONORARY MEMBERS.

Date.	Name.	Residence.
	Kenrick, John A.*	Newton.
	Kenrick, William*	"
	Walker, Samuel*	Roxbury.
	Wilder, Marshall P.*	Dorchester.
	Warren, J. L. L. F.*	California.
	Winship, Jonathan*	Brighton.
	Winship, Francis*	"
	Breck, Joseph*	"
	Carter, William E.*	Cambridge.
	Hovey, Charles M.*	"
	Downing, Andrew J.*	Newburgh, N. Y.
	Downing, Charles*	" "
	Cabot, Joseph S.*	Salem.
	Manning, Robert*	"
	Meehan, Thomas	Germantown, Pa.
1871	Leroy, Andre*	Angers, France.
1871	Krelage, J. H.	Haarlem, Holland.
1876	Barry, Patrick*	Rochester, N.Y.
1876	Warder, John A.*	Cleves, O.
1876	Gray, Asa*	Cambridge.
1876	Parkman, Francis*	Boston.
1876	Strong, William C.	Brighton.
1876	Hyde, J. F. C.	Newton.
1876	Flint, Charles L.*	Boston.
1876	Sargent, Charles S.	Brookline.
1876	Thomas, John J.*	Union Springs, N. Y.